JULY 18, 1960

# PURCHASING

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Buyers Beware — The racket boys are back

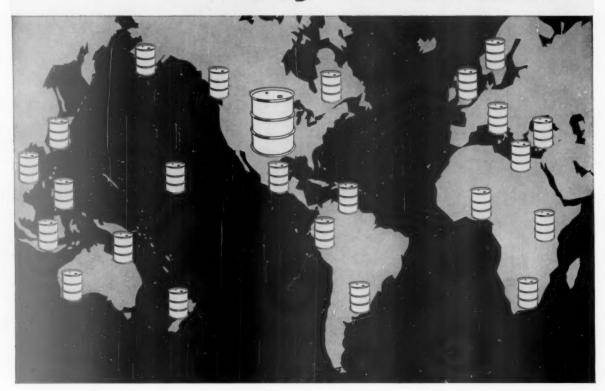
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A CONOMER MAST PUBLICATION

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SEVENTY-FIVE CENTS

# Wherever your customers buy MACOMA...



# Its performance and name are the same around the world

#### Other Outstanding Shell Industrial Lubricants

Shell Tellus Oils—for hydraulic systems

Shell Alvania Grease—multi-purpose industrial grease

Shell Turbo Oils—for utility, industrial and marine turbines

Shell Rimula Oils—for heavy-duty diesel engines

Shell Talona R Oil 40—anti-wear crankcase oil for diesel locomotives

Shell Dromus Oils—soluble cutting oils for high-production metalworking

Shell Voluta Oils—for high-speed quenching with maximum stability

Shell Macoma Oils are available world-wide . . . assurance that your customers abroad will get the same performance from your equipment that your domestic customers rely upon.

Macoma® Oils are premium quality, fortified extreme pressure industrial gear oils. They provide superior high-load-carrying capacity and are particularly effective where overloading, severe shock-loading or general heavy-duty conditions exist.

Macoma Oils have these added built-in benefits: excellent resistance to oxidation, great adhesiveness, rapid separation from water. They are non-corrosive, non-foaming and have high stability in storage.

For more information, write Shell Oil Company, 50 West 50th Street, New York 20, New York, or 100 Bush Street, San Francisco 6, California. In Canada: Shell Oil Company of Canada, Limited, 505 University Avenue, Toronto 2, Ontario.

#### SHELL MACOMA OIL

the extreme pressure industrial gear lubricant





#### CENTURY MOTORS DRIVE PULVERIZING MILL VENT FANS

At a plaster board plant in Georgia, Century motors are providing dependable power to drive two large vent fans on roller-type pulverizing mills. The mills crush walnut-sized rock into talcum-like powder for the manufacture of dry-wall panelling and plaster.

Two Century 30 horsepower, totally enclosed, fancooled motors drive the vent fans. These fans provide critical air circulation for separating air from the finelyground powder in the cyclone. The high reliability of the Century TEFC motors helps insure the availability of these important vent fans.

For applications where abnormal quantities of dust, grit, oil or chemical fumes are present, Century TEFC motors are ideal. Their totally enclosed, fan-cooled feature makes them dust-proof, cuts maintenance costs.

Century Electric application engineers have years of experience in applying the right motor for the job. This is your assurance of getting *more* than just a motor.

#### CENTURY ELECTRIC COMPANY

St. Louis 3, Missouri Offices and Stock Points in Principal Cities

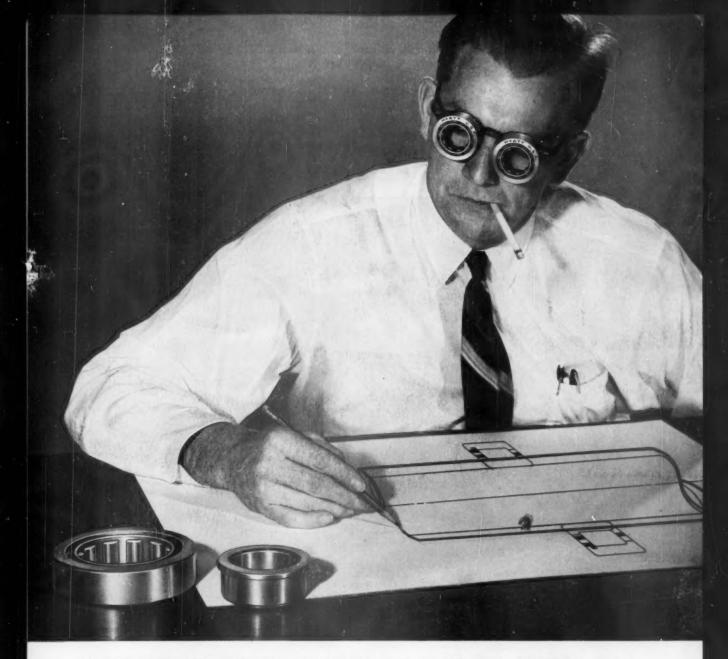




SAFETEX SUPERSTANDARD GUMMED TAPE



CENTRAL PAPER COMPANY, MENASHA, WISCONSIN



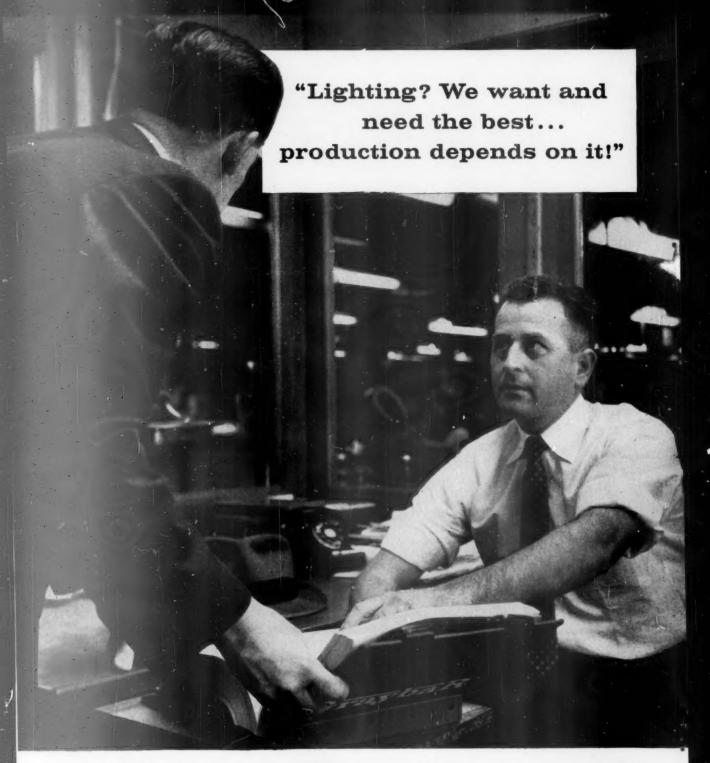
#### YOU GET BIGGER SHAFTS IN THE SAME SPACE WHEN YOUR "SPECS" READ HYATT

To gain more space, simply eliminate the separable race from a Hyatt Hy-Roll bearing. For Hyatt rollers will operate directly on any shaft or bore that you've hardened and ground to bearing specifications. But, first be sure you're using Hy-Roll bearings. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.

# Replacement bearings available through United Motors System and its authorized bearing distributors.

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Planned lighting can improve output. Consult with your Graybar man: he is well versed in the best and latest in lighting for better production, in plant or office.

Moreover, Graybar offers the widest selection of lighting equipment\* available from any single source! For lighting . . . or ventilation, motors, controls, power distribution equipment . . . call Graybar. We'll work with you or your electrical contractor.

and G-E lamps, too

GraybaR ELECTRIC COMPANY, INC.



420 LEXINGTON AVENUE, NEW YORK 17, N. Y. . OFFICES IN OVER 130 PRINCIPAL CITIES

# PURCHASING

The Methods and News Magazine For Industrial Buyers

JULY 18, 1960 VOLUME 49, No. 2

B. P. MAST Chairman of the Board B. P. MAST, JR. President

RAY RICHARDS Vice President and Publisher

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Sales, Inventories, New Orders
Washington Report
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EDITORIAL AND EXECUTIVE OFFICES
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JULY 18, 1960

THE
STOVER
LOCK NUT
FAMILY
CLAMPS DOWN
ON COSTS
AT
EVERY
TURN

Stover Automation Lock Nut, Grade B, for use with low carbon and medium carbon heat treated boits and studs (SAE 2, 3, 5). Stocked in bulk containers and standard packages by authorized industrial distributors.

#### Don't let the simple appearance fool you:

Stover Lock Nuts take 25% less tightening torque to reach required clamping loads than common nuts or competitive lock nuts. This means you can use smaller, lighter driving tools. Yet Stover Lock Nuts won't back off by themselves—seated or unseated. Moreover, they start like common nuts, run up smoothly without galling or seizing, can be hand or hopper fed, and are fully reusable.

Car and tractor makers, for example, used about 80 million Stover Lock Nuts last year. The money these companies saved in *either* purchasing, assembly, or service-in-the-warranty-period easily paid

for the lock nuts' initial cost. Value - in spades!

Stover Lock Nuts cost a little more than common nuts, but are very competitive with other lock nuts. They're available in bulk, with the popular styles also available through industrial distributors. Write us for the name of your nearest distributor, samples, or the just-published Stover Engineering Manual.

#### LAMSON & SESSIONS

8000 TIEDEMAN ROAD - CLEVELAND 8, OHIO
Plants in Cleveland and Kent, Ohio - Chicago and Birmingha



#### FIVE STANDARD STYLES



Automation

1/4"-1"

A basic nut for general use.



Flange #8 - ½" For clamping soft and/or thin materials.



Thin Hex Collar 1/4'' - 1/2'' Used where space is a problem, such as on pinion and pulley shafts.



Hex Collar
7/6" - 2"
Lower on-torque in the larger sizes than Automation style.



Heavy Hex Collar 7/6" - 2"
Used where greater bearing surface is needed than available with Hex Collar style.

#### **Pulse of Business**

#### Steel Is Off More Than Seasonally

**Operating Rate** 

Drops Under 50%

A SIDE from normal seasonal influences, the current business lull is largely attributable to the steel slump.

In recent weeks, the steel mills have been operating around 50% of capacity—lower than might normally be expected even when taking the usual summer letup into consideration. For example, in one recent week, the operating rate fell to 42.7%, the lowest it has been in any non-strike period since July 1939.

Next month, of course, steel buying by the auto companies is expected to pick up. That's because the automakers will be buying for their 1961 models which will soon be rolling off the production lines.

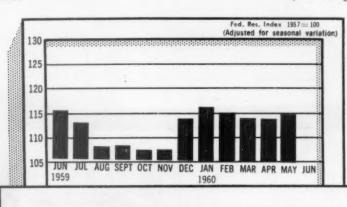
But many economists believe that increased automotive steel buying will be offset by a further decline in orders from other industries. Wholesale plant shutdowns, coupled with a general slackening in the economy may just about balance the increase in orders from the auto companies.

Best estimates now are that the July operating rate will range between 50% and 55% of capacity. In August, the rate may rise to roughly 60%—which would just about equal last month's output.

What about the autumn? Some steel men anticipate an operating rate of around 70% in September, with the possibility of a slight increase in the latter months of the year.

Reason for the expected rise: the metalworking industries will need more steel to maintain production. They can't live off inventory forever. Currently, consumption seems to be going along at a rate equivalent to about 70% to 75% of capacity.

Part of the problem the steel mills face now stems from the fact that many steel warehouses are cutting their stockpiles. The warehouses had anticipated that their first half sales would rise 10% over the same period last year. Instead, volume was off 10%. As a result, the steel service centers have around 3.8 million tons in inventory—more than they had at the outset of the recent steel strike. (Turn Page)

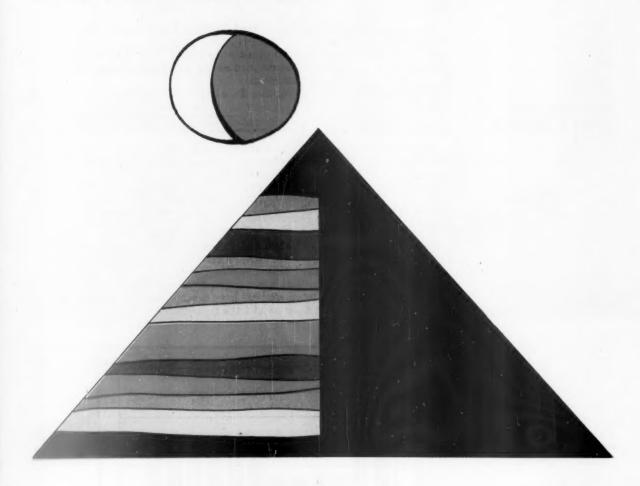


INDUSTRIAL PRODUCTION

The Federal Reserve Board's Industrial Production Index advanced a point to 110 (1957= 100). This 1% increase in the index follows three months of decline.

For More Information about ad on facing page -Write No. 158 on Place Mark Card - pg. 32

JULY 18, 1960 You'll put permanence into products with Western Brass because brass is tough to start with...because time, use and environmental attack only mellow it. But whether you use brass for strength or appeal, your product calls for an individual alloy, temper, gauge and finish. Count on Western Brass to recommend and produce exactly the right one. (It will even arrive in boxes specially adapted to your handling methods.) You'll make it better with <u>durable</u> brass. You'll make it best with "tailor-made" Western Brass.



OLIN MATHIESON - METALS DIVISION - EAST ALTON, ILL., NEW HAVEN, CONN.



The long decline in steel operating rates began early in March, when it stood at 93.1%. It looks like this decline may continue well into next month before the beginning of the fall pickup.

E ACH MONTH, when the unemployment statistics are released, a great hue and cry is raised about the large number of Americans who are out of work.

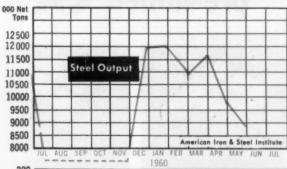
The latest inemployment figures available from the Department of Labor show that 3.5 million were unemployed in May. Although this was 200,000 less than in the previous month, it still amounts to 4.9% of the labor force.

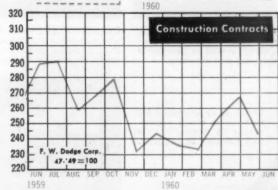
But despite these slightly discouraging statistics, civilian employment in May stood at 67.2 million. This was higher than any previous May and was also 1.2 million more than the year-agc figure when the economy was booming along before the steel strike.

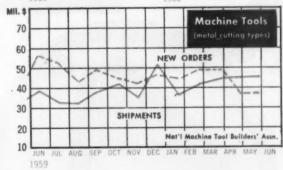
In addition, there are a number of other factors that should be considered in connection with the May unemployment figures, including:

- (1) The number of long-term unemployed—those who have been seeking work for 15 weeks or more—dropped by 300,000.
- (2) Nearly half the unemployed have been looking for jobs for less than five weeks. This group, for the most part, has not felt the economic pinch of being out of work for a long period of time. (Turn Page)

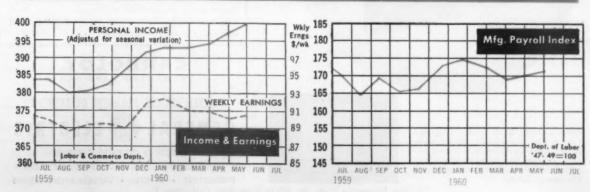
#### PRODUCTION







#### LABOR



Metallurgical Memo from General Electric

# General Electric announces pre-honed CARBOLOY inserts



Hand-honing is inaccurate, and time-consuming-frequently results in premature chipping and breaking.



Chamfered, or ground-flat, edges are geometrically weaker than a radius and are more easily chipped or broken.

Unhoned or as-ground inserts show rough edgesresult in unpredictable tool life due to chipping.





Shown here, both under magnification and graphically, is an edge of the new Carboloy pre-honed insert. Radius is geometrically ideal to minimize chipping, extend tool life many times.

Now you get more predictable tool life...lower cost per cutting edge ... no hand-honing cost!

# Ready-to-use...honed to a precise radius...promise BETTER PROFITS THROUGH BETTER TOOLING

Now General Electric Carboloy inserts are pre-honed at the factory! Here's what it means to you:

- 1. An insert with edges honed to precise radii gives the strongest geometric shape to withstand cutting pressures. This reduces chipping increases the predictability of tool life. Hand honing cannot achieve precise radii G-E pre-honing can... and does!

  2. Since chipping is minimized, fewer cutting edges are wasted. The result is lower cost per cutting edge.
- are wasted. The result is lower cost per cutting edge.

  3. Since inserts come pre-honed and ready-to-use, the labor cost of hand honing is eliminated. This more than offsets the charge for pre-honing.
- 4. Pre-honed Carboloy cemented carbide inserts have standard edge radii honed to a greater or lesser degree, depending on the job to be done. You'll know the honing is right!

Ask your Authorized Carboloy Distributor about pre-honed Carboloy inserts, convertible seats, tool-holders, and brazed tools. Or, write: Metallurgical Products Department of General Electric Company, 11143 E. 8 Mile Road, Detroit 32, Michigan.

#### TOPS IN TOOLING QUALITY

From the research and quality-control facilities of the Metallurgical Products Department of General Electric comes the outstanding quality tooling line in the metalworking industry. The new Carboloy pre-honed inserts, as well as the complete line of Carboloy toolholders, inserts, insert seats, convertible seats, and brazed tooling, are designed to meet every tooling need efficiently and economically.

#### CARBOLOY.

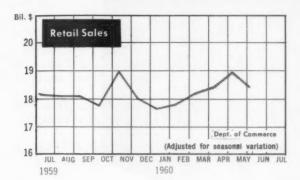
METALLURGICAL PRODUCTS DEPARTMENT

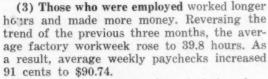
GENERAL & ELECTRIC

CARBOLOY® CEMENTED CARBIDES

MAN-MADE DIAMONDS . MAGNETIC MATERIALS

THERMISTORS • THYRITE® • VACUUM-MELTED ALLOYS
For More Information Write No. 160 on Place Mark Card—Page 32





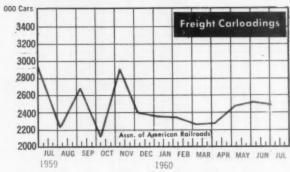
In one area, however, the statistics show a consistent gradual decrease in the number of those working. That segment is factory employment.

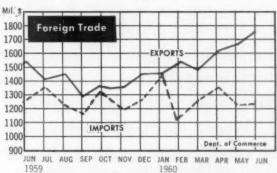
Part of the reason for the decline in factory employment is the high wage rates which labor unions have demanded—and won—in a number of major industries. Because wages have gone so high—and because of the technological revolution in industry today—many companies are stepping up their automation program. At least temporarily, it's a case of machines replacing men.

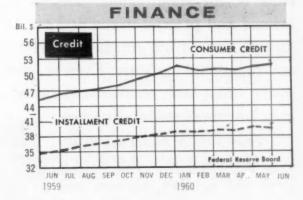
The June employment and unemployment figures, of course, were distorted somewhat by the more than two million high school and college youths moving into the job market. These 14-to-19 year olds created a bulge in the number of jobless and boosted the total to roughly 4 million.

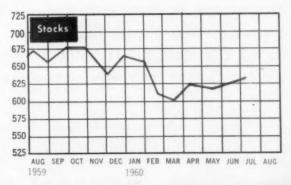
However, about a million youths did find summer jobs. This raised the level of employment to a record high.

An important point: these high school and college youths are marginal workers. Many of them actively seek jobs only when opportunities are favorable, rather than because of a compulsion to earn a living. And this year's crop is larger than in the past—as the generation of wartime babies is now reaching working age.

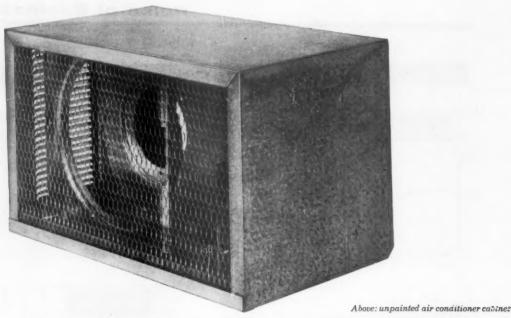








#### Better Products Through Better Methods and Steels



How modern zinc-coated steel sheets keep air conditioners weatherproof—season after season.

When cold-rolled sheet steel formed the cabinets and special drawn base pans of air conditioners, they were primed and painted inside and out to protect them from constant exposure and functional moisture. Even so, corrosion often took hold around fastenings, louver edges and scratches.

Now that Weirkote continuous-process zinc-coated steel is used, the cabinet, louvers and chassis can be cut, bent and formed (even worked to the lim-

its of the steel itself) without chipping or flaking the corrosion resistant

zinc surface. When the outside paint finish is applied (primarily for decoration) the air conditioner has the double protection of a coating of paint and a coating of zinc assuring corrosion-free service for many years to come.

It's because of this weather-shedding surface, this superior formability that continuous-process zinc-coated steel is more and more the metal spec-

ified for air conditioning, heating and ventilating equipment.

A major supplier: Weirton Steel Company—producer of Weirkote continuous-process zinc-coated steel and many other

steels that improve products, methods and profits throughout industry.

WEIRTON STEEL
Weirton, West Virginia



#### The P.A.'s Outlook

- Buyers Less Optimistic Over Short-Term
- Confidence Index Drops Another Point to 96
- N.A.P.A. Observes
   A Business "Plateau"

P.A.'s ARE becoming less optimistic about the short-term business outlook.

This fact shows up clearly in a survey of 1000 purchasing executives conducted by Purchasing Magazine. The Business Confidence Index, based on this poll, dropped another point this month to 96 (1958=100). The index is now at its lowest level since last December. It indicates that sales and new orders in July, August, and September will be off from those of earlier months.

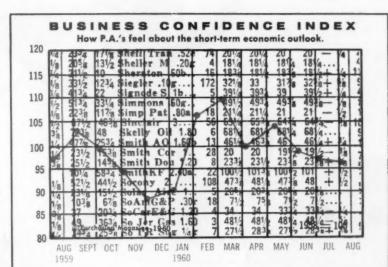
For example, the purchasing agent of an upstate New York tool company says, "Business conditions here are off. And I can't foresee any change during the next few months."

The purchasing manager of a Western machinery manufacturing company, notes, "Business is only fair. We expect no marked change through 1960."

And the P.A. for a Middle Atlantic company says, "Annual plant vacation shutdowns appear to be increasing in popularity. This has a growing impact on business volume during the summer months."

Recent reports from N.A.P.A. and local association business survey committees follow the same general tenor.

For More Information about ad on facing page -Write No. 161 on Place Mark Card - pg. 32 JULY 18, 1960



Another drop in Purchasing Magazine's Business Confidence Index in July brought this sensitive indicator of purchasing agent opinion to 96 (1958=100). The continued decline in the index indicates that P.A.'s throughout the country feel business conditions will be at a slightly lower level in the next quarter.

According to the N.A.P.A., "Business continues on a plateau. Generally, it remains satisfactory, while, at the same time, it is still not living up to earlier rosy predictions."

Regarding inventories, the report says that "liquidation continues . . . One of the reasons quite frequently given for continuing reductions in purchased materials' inventories is the offsetting increasing inventories of finished goods. It is definitely uneconomic to have both of these inventories high."

Says the Cleveland association: "The appearance of production and new order stability menitoned last month is a little more firmly entrenched. A spotty condition continues to exist."

The Cleveland group also says: "Knowing that most materials and products are in good supply, cus-

tomers are increasing their demands for quick delivery. Vendors, on the other hand, are usually meeting these demands but are expressing some concern."

#### **30-Day Lead Time**

The Pittsburgh association says that 43% of those surveyed report a lead time for production materials of 30 days or less. Another 40% work on a 60-day lead time, while the remainder require 90 days or longer.

A whopping 89% of those polled say the price paid for principal items remains the same. Eight percent report paying lower prices, while only 3% say that they are paying more.

The Canadian group also notes a business plateau. "The most important contributory factor," it says, "is the very low number of residential housing starts."



Railway Express never limits you to one kind of transportation. We provide trucks to ship across *town*. Trucks and trains and planes to ship across the *nation*. Ships and planes to ship across the *world*. Count on Railway Express Eager-Beaver service for the kind of transportation that best suits your particular needs.

That's not the only advantage Railway Express offers you. For example:

- Nationwide coverage to some 23,000 communities in the U.S.
- · International service to and from almost anywhere in the world
- · Unified, one-carrier responsibility all the way
- Door-to-door delivery at no extra charge (within authorized limits)
- · Lower rates on certain shipment aggregations of 300 lbs. or more
- Special low rates on many other commodities

Railway Express gives you service no other organization can match. And, with our long-range improvement plans well underway, we're able—and eager—to give your shipments the thorough service you want. Next time you ship, call Railway Express—and see!



For More Information Write No. 162 on Place Mark Card-Page 32

#### **Price Trends**

- Buying of Nonferrous Metals Slackening
- Foreign Fabricators
   Boost Copper Purchases

A CTIVITY in the nonferrous metal markets has slowed somewhat during the summer lull. Vacations and plant shutdowns have affected most other commodities as well.

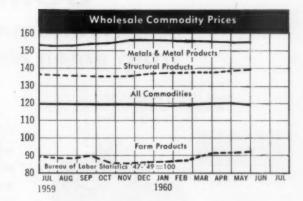
Here's the current situation in some of the more important raw materials bought by P.A.'s:

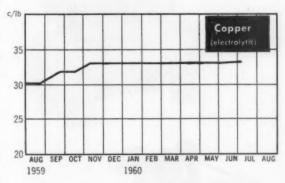
Copper: Few domestic orders have been placed for delivery next month. But European copper buyers have been building up their inventories substantially, partly through purchases from American copper producers. This buildup is largely based on fears that turmoil in the new Republic of Congo and the surrounding areas could interrupt production there.

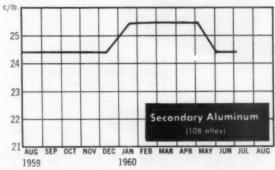
In the latest monthly report of the Copper Institute, shipments of refined copper hit a new record of 319,134 tons. Nevertheless, copper stocks held by producers rose 2973 tons to 312,330 tons.

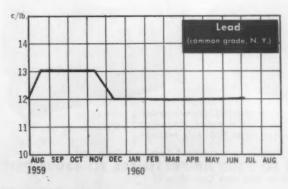
Lead: While there have been some flurries of lead buying by purchasing agents recently, the market has been generally weak. P.A.'s for cable and battery manufacturers have not been buying as much as they did last year at this time.

Stocks of pig lead at refineries increased for the third consecutive month, reports the American Bureau of Metal Statistics. Total stocks rose 4819 tons to 123,148 tons. (Turn Page)







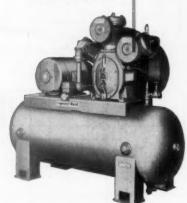




# high pressure are

...in small quantities
from small air-cooled compressors

Model H15TE tank mounted compressor will deliver air at 250 psig pressure.



Model 231 baseplate mounted compressor will deliver air at 500 psig pressure.

1½ through 25 horsepower 250 to 5000 psig pressure

For air blast circuit breaking, air starting of engines, valve test stands, accumulator service, oil field rigs, air craft support equipment, etc., Ingersoll-Rand can supply compressors, off the shelf, specifically designed for high pressure operations.

Proper selection of high pressure compressors is important. Duty cycle, minimum and maximum running time and intended maintenance are all important factors. Ingersoll-Rand makes these compressors to give you exceptional value in a most compact, economical and dependable design.

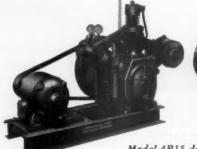
Your local Ingersoll-Rand sales engineer is experienced in the field of high pressure compressors and is prepared to assist you in choosing the proper compressor for your application. See him today or write to—

Ingersoll-Rand
11 Broadway, New York 4, N. Y.

Model 15T3 baseplate mounted compressor will deliver air at 3000 psig pressure.



Model 41 baseplate mounted compressor will deliver air at 1000 psig pressure.



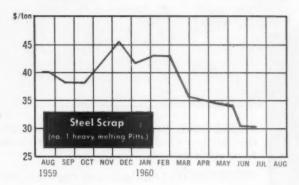
Model 4R15 double ended, baseplate mounted compressor will deliver air at 5000 psig pressure.

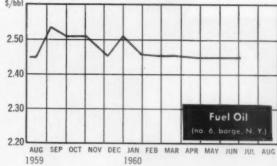


OTHER I-R HIGH PRESSURE COMPRESSORS TO 7500 HP-PRESSURES TO 35000 PSIG

For More Information Write No. 163 on Place Mark Card-Page 32

#### **Price Trends**





Zinc: Buyers for diecasters are expected to enter the market shortly when automobile changeover time begins. In recent weeks sales have been sharply lower than in the earlier months of 1960.

Zinc stocks have reached the highest level in six months, according to the latest monthly report of the American Zinc Institute. Unsold stocks at smelters' plants rose 17,177 tons to 165,038 tons. Shipments were down 9887 tons to 62,039 tons.

Tin: Tin buying has slowed, too. But with more activity due soon in Singapore, tin purchases are expected to step up in this country.

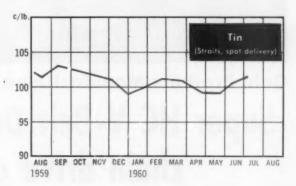
Member governments of the International Tin Council are now considering a proposed agreement to go into effect in twelve months. This new pact among six producing nations and 17 consuming nations is basically the same as the current one due to expire next June 30.

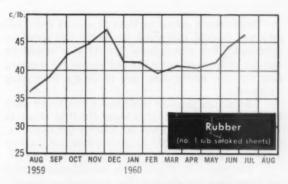
**Aluminum:** Shipments of aluminum in the first half totaled about 925,000 tons. This marks a drop of around 40,000 tons from the first six months last year.

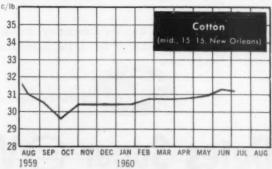
However, the Business and Defense Services Administration anticipates a 1% gain in total 1960 shipments. This would bring deliveries for the year up to 2,500,000 tons.

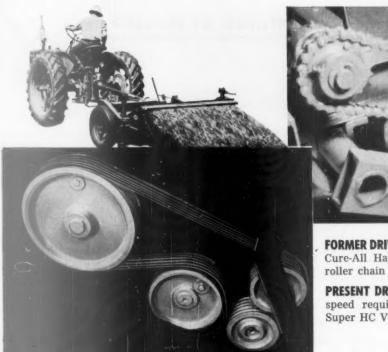
Wholesale Prices: The Wholesale Price Index registered its first drop since last November—falling 0.3% to 119.7 (1947-49=100). Contributing to the downturn were gasoline, certain farm products, and manufactured animal feeds.

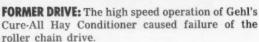
Average prices for machinery and motive products dropped 0.3%. Chiefly responsible for the fall was a price decline of over 10% in some categories of small integral horsepower electric motors.











**PRESENT DRIVE:** Both the limited space and high speed requirements were met with this **Gates** Super HC V-Belt Drive.

**Gehl Brothers Manufacturing Company Finds** 

# Super HC V-Belt Drive handles speeds chain drive <u>couldn't</u> take!

Roller chain drives on Gehl's Cure-All Hay Conditioners "would not stand up under the speed of operation." Yet conventional V-belts that would fit into the space available could not handle the working load for this outstanding line of forage harvesting equipment.

The design problem remained a tough one until the introduction of the Gates Super HC High Capacity V-Belt early last year. Then the Gates Field Engineer, working closely with Gehl Engineers designed the new drive shown above.

"The Super HC V-Belt Drive has eliminated need for shear pins and clutches, has increased efficiency, and lowered maintenance costs," is the pleased report from Gehl personnel.

#### Take advantage of Super HC on your equipment

Whenever you have a drive change on a new model or are replacing belts or sheaves, let your Gates Representative show you how Super HC Drives can reduce sheave diameters 30% to 50%, drive space up to 50%, drive weight and cost as much as 20%.

A handbook, "The Modern Way to Design Multiple V-Belt Drives," is yours for the asking. Simply contact your Gates Representative listed in the Yellow Pages.

TPA 505

The Gates Rubber Company, Denver, Colorado Gates Rubber of Canada Ltd., Brantford, Ontario





Gates Super (HC) V-Belt Drives same hp capacity in smaller "package"

#### Sales, Inventories, Orders

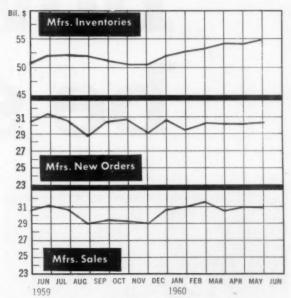
## Mfrs. Inventories Rise; Sales, Orders Steady

SEASONALLY-ADJUSTED manufacturers' inventories increased slightly in May over the previous month, while new orders and sales were unchanged.

Inventories rose \$300 million during the month, reports the Department of Commerce. The increase was noted in both durables—which advanced \$200 million—and nondurables—which rose \$100 million.

New orders were constant at \$30.4 billion. Durable goods manufacturers notched an increase of around \$150 million in new business, but orders of nondurables producers were down.

Sales were also unchanged—at a level of \$31 billion with both durables and nondurables showing little change.



Dept. of Commerce—Seasonally adjusted

14 / 151	1959	1		1960		
Manufacturers' Sales Seasonally Adjusted (Millions of Dollars)	May	Jan.	Feb.	Mar.	Apr. (r)	May (p)
All Manufacturing Industries	30,742	30,787	31,580	30,840	31,029	31,034
Durable-goods industries.	15,515	13,352	15,670	15,170	15,005	15,087
Primary metal	2,858	2,656	2,690	2,540	2,306	2.231
Fabricated metal.	1,711	1,690	1,720	1,690	1,692	1,748
Machinery.	4,507	4,695	4,840	4.750	4.832	4,772
Transportation equipment.	3,463	3,622	3,570	3,460	3,361	3,510
Lumber and furniture	1,041	843	920	880	929	950
Stone, clay, and glass	766	737	770	700	748	750
Nondurable-goods industries	15,227	15,435	15,900	15,670	16,024	15,947
Food and beverage	4,617	4,723	4,720	4,710	4,721	4,642
Tobacco	388	387	430	420	388	395
Textile	1,310	1,226	1,260	1,200	1,259	1,276
Paper	1,026	994	1,070	1,050	1,030	1,031
Chemical	2,089	2,268	2,380	2,300	2,383	2,357
Petroleum and coal	2,994	3,044	3,130	3,160	3,264	3,205
Rubber	524	506	570	510	533	547
Manufacturers' Inventories Seasonally Adjusted (Millions of Dollars) All manufacturing industries.  Durable-goods Industries.  Primary metal. Fobricated metal. Machinery.  Transportation equipment. Lumber and furniture. Stone, clay, and glass  Non-durable goods industries. Food and beverage. Tobacco. Testile.	51,599 29,734 4,312 3,278 9,482 7,167 1,759 1,254 21,865 4,967 1,873 2,487	53,182 30,622 4,172 3,091 10,174 7,308 1,886 1,381 22,560 4,796 1,975 2,554	53,900 31,260 4,320 3,230 10,320 7,530 1,870 1,380 22,640 4,820 1,950 2,650	54,340 31,770 4,450 3,330 10,480 7,640 1,860 1,420 92,570 4,820 1,950 2,670	54,657 31,925 4,628 3,316 10,528 7,583 1,848 1,421 22,732 4,854 1,952 2,719	55,000 32,108 4,694 3,359 10,594 7,584 1,838 1,434 22,892 4,993 1,953 2,698
Paper	1,482	1.541	1,540	1,540	1.551	1,583
Chemical	3,730	4,050	4,050	4,060	4,075	4,106
Petroleum and coal	3,380	3,405	3,400	3,330	3,351	3,340
Rubber	995	1,148	1,140	1,160	1,191	1,160
Manufacturers' New Orders Seasonally Adjusted (Millions of Dollars) All manufacturing industries.  Durable-goods industries. Nondurable-goods industries.	30,541 15,241 15,300	29,698 14,231 15,467	30,590 14,800 15,790	30,290 14,640 15,660	30,353 14,469 15,884	30,421 14,626 15,795
(10/10/10/10/10/10/10/10/10/10/10/10/10/1		12,701			12,004	12,172
	(r) Revised.		(p) Prelin	ninary.		

# How to be sure



An Island Creek technician uses the optical pyrometer to determine ash fusion point of a coal

What the invoice shows a coal costing is one thing. What the final net costs turn out to be, per 1000 pounds of steam, are something else again. Something obviously even more important, too, than the BTU's per ton. Good reason to investigate Island Creek Precisioneered Coals, inherently superior eastern coals, mined and prepared by the most

... you are buying coal by the one indisputable yardstick: the lowest cost per 1000 pounds of steam. Insist on Island Creek Steam Coals. They're Precisioneered.

modern methods to precision standards to perform most efficiently in the specific burning equipment in which it will be used. Our engineers would like to lay some case histories before you and your plant people that prove how Island Creek Precisioneered Coals can reduce cost per 1000 pounds of steam. Write or phone. No obligation.



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### **Washington Report**

# Modest Expansion Will Continue Through 1961

THE CURRENT business recovery cycle has been underway for 27 months — just several months short of the "average" in the 25 such cycles since 1854. Many are now wondering how long it will last.

Government economists, including the President's Council of Economic Advisers, are closely studying present business conditions. But at present, there is no plan to stave off a possible readjustment, aside from the policy of easier money and more plentiful credit.

For the current year, there is enough impetus to carry through to a record high in gross national product. The only factors that appear troublesome are:

(1) A substantial amount of unused plant capacity.

(2) A relatively high rate of unemployment, even though employment levels are at record highs.

(3) The absence of any new and expanding segment of the economy that can put new push into the business cycle.

However, it is generally agreed here that there is no immediate cause for concern. The summer lull in industry will pass and in the fall, there will be the usual stepup in industrial activity.

A U. S. Chamber of Commerce conference on the outlook for the remaining months of 1960 came to the conclusion that "there are no major economic maladjustments emerging in the economy". The overall summary: "the modest expansion that is underway should continue through the rest of the year and well into 1961."

Dr. Emerson P. Schmidt, the Chamber's director of economic research, suggested that the "current uncertainty frequently expressed may itself be a favorable factor." He explained that uncertainty as to the direction of the economy might help energize many enterprises and activities, while encouraging better values and improved goods and services.

#### Capacity is Larger

Speaking at the conference for the steel industry, L. S. Hamaker, assistant vice president in charge of sales of Republic Steel Corporation, explained that his industry expects to ship 115 million tons of ingot steel this year. In the record year of 1955, 117 million ingot tons were shipped.

The essential difference, he pointed out, is that the 1955 shipments represented an average operating rate of slightly over 90%, while the tonnage figure this year will represent an average operation of 77%. Total capacity in



L. S. Hamaker, assistant vice president of Republic Steel Corp., says the steel industry will ship 115 million tons of ingot steel this year with an average operating rate of 77% of capacity.

1955 was 126 million ingot tons, while the current capacity is just under 150 million tons.

The current low rate of operation, he said, is due largely to inventory adjustment. But he added that he doubts this has affected consumer earning power.

Hamaker pointed out that he does not believe inventories at either manufacturing or merchandising levels are excessive. He noted that:

"The inventory adjustment in the second quarter has been very harsh on the companies and industries directly involved. In total, there is no severe imbalance of inventories when related to sales. A recent release by the National Industrial Conference Board indicates that in April the inventory-to-sales ratio in retailing was the lowest for any month since 1947. If the average inventory-sales ratio in manufacturing over the past 10 years can be considered normal, manufacturing stocks at the end of April were \$1.4 billion below normal."

Hamaker said that he does not see any basis for a downturn during the latter part of this year. He anticipates shipments of 21 million tons of finished steel products during the fourth quarter of the year, compared with about 10 million tons during both the second and third quarters of this year.

With this "good but unspectacular" performance in 1960, Hamaker said he does not believe that either the steel industry or the entire economy will be in a position at the end of the year that will make a downturn in 1961 "inevitable or even likely."

(Turn Page)



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#### **Washington Report**

General Orval R. Cook, president of the Aerospace Industries Association of America, told the conference that gross sales of the aerospace industry have been in excess of \$11 billion annually for the last three years—and will likely continue at this level in 1960 and 1961. Within the pattern of seeming stability, however, there have been major changes in output and type of product, he said.

#### Work Less Profitable

General Cook said that his industry has been changing over from one primarily engaged in production to one engaged largely in research and development. This type of work, he said, is not as profitable.

Due to the changed nature of the aerospace industry, changes have also occurred in the level of employment, the type of personnel, the plant facilities, and the earnings position.

Of specific interest to purchasing agents is General Cook's forecast that the changes in the aerospace industry are having significant impact on the many suppliers and subcontractors serving it.

As production runs in the industry drop there will be fewer orders for components and accessories. General Cook pointed out that opportunities for subcontracting will continue to dwindle in this industry.

#### **Alerting Suppliers**

As his word of advice to subs and suppliers, the General said:

"Those firms engaged in supplying this industry with its raw materials and specialized equipment and tools certainly should be alert to the changes now under way and should be evaluating these changes in terms of their own plans and programs."

The aerospace industry, according to General Cook, is seeking to diversify in an effort to develop financial strength and stability His implication was that subs and suppliers would do well to follow a similar approach.

#### Capital Spending Will Reach \$37 Billion

The Department of Commerce reports that the current emphasis in plant investment is on replacement and modernization of existing facilities—aimed at improving production and lowering costs—rather than increasing capacity.

A further increase in the rate of capital expansion is expected during the third quarter of the year. Total investment for 1960 is expected to be \$37 billion—compared with \$32½ billion last year.

Manufacturing is in the lead in increased spending for equipment. Durable goods producers expect to spend 29% more than last year, while nondurable goods companies plan to spend 18% more than last year.

#### **Higher Appropriations**

Steel companies report that their total spending for new plant and equipment this year will be \$700 million more than last year. Their rate of spending during the third quarter of this year is expected to reach within 5% of the previous record in 1957.

In contrast, nonferrous metals producers are holding new investment to a level slightly above recession-low levels.

Automakers expect a steadily rising trend in plant and equipment spending—but the total for the year will not be as big as forecast earlier. Other transportation equipment manufacturers have also scaled their expansion plans down.

#### Commerce Dept. Revises Industry Forecasts

Government has lowered its sights on the business outlook for certain industries. At the beginning of the year the Commerce Department issued a series of forecasts, each indicating there would be a big surge in business volume over 1959 levels.

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Zero-Mist can mean cost savings for you.

There is sound reason for the steady increase in the use of Udylite Zero-Mist over the past six years. Users everywhere have learned that here is the one mist suppressant that actually does what it's supposed to do.

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on the west coast: L. H. Butcher Co.





corporation

#### **Washington Report**

ample, the forecast earlier this year was that 1960 sales would exceed those of 1959 by about 7%. With first half sales 8.6% below the corresponding period of 1959, volume for the entire year is now expected to only equal the 1959 rate.

Prospects for the steam turbine industry are optimistic for 1961 and 1962, even though shipments are currently declining. New orders for steam turbine generators continue to rise, but they will not be reflected in shipments until next year due to the long manufacturing lead time.

The outlook for the glass container and packaging industries gives a significant indication of the food merchandising outlook. For glass containers, industry sources expect volume to exceed last year by 6%. In converted flexible packaging products, an 11% increase over last year is anticipated.

#### Chamber Hits Secondary Construction Boycotts

The Chamber of Commerce of the United States has attacked the pending bill before Congress that would legalize secondary boycotts by construction unions.

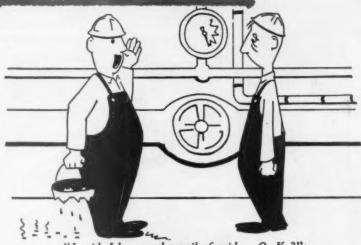
If this bill is enacted, the Chamber says, the National Labor Relations Board would not be able to obtain injunctions to send strikers back to work in defense industries.

Harry J. Lambeth, secretary of the Chamber's committee on secondary boycotts, notes that construction, repair, and maintenance work is constantly going on at major defense bases and plants. And he says that if secondary boycotts are illegal for all other industries, they should be illegal for construction also.

"The vast majority of the secondary boycotts at construction sites," he says, "are the results of objections by a construction union to the letting of a contract to a contractor whose employees do not wish to join a union or belong to another union."—A. N.

Wecksler

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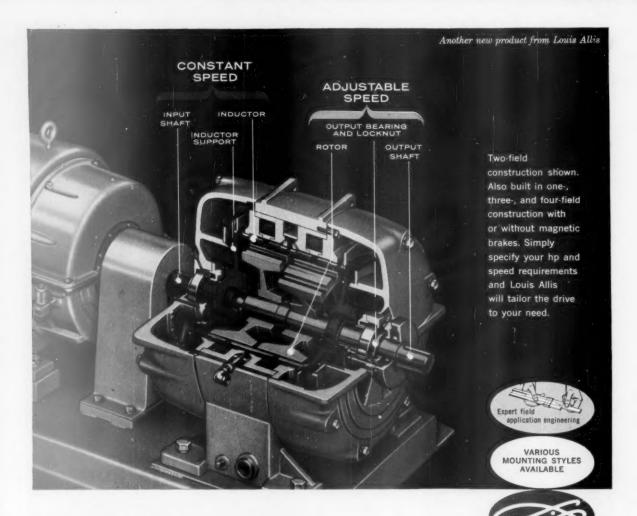
# ACE chemical resistant equipment BY AMERICAN HARD RUBBER COMPANY

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See ACE equipment in Chemical Engineering Catalog

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# The new Louis Allis MAGNETIC DRIVE

#### A compact, adjustable speed drive up to 2000 hp!

Based on a liquid-cooled magnetic coupling design, the *all-new* Louis Allis Magnetic Drive offers you the finest in precise regulation, compactness, and design flexibility for adjustable speed drives up to 2000 hp.

A unique annular cooling manifold provides effective heat transfer. It eliminates "water-drag" since there is no liquid in the air gap between the constant-speed and adjustable-speed members. There's no "flooding" the Magnetic Drive or forcing of water into bearings. And you'll never find condensation in the bearings. The reason: a planned flow of air through the drive reduces bearing temperatures and exhausts any condensation which might occur as the unit cools off after use.

Stationary field construction eliminates slip rings. All bearings can be lubricated without disassembly, and grease chambers provide ample grease reservoirs. Coils and lead connections are encapsulated in a chemical-and heat-resistant polyester — and simplified construction eases inspection and servicing. The *all-new* design permits simple relocation of cooling inlet, conduit box, discharge, etc., regardless of direction of rotation.

If your plans call for adjustable speed drives — specify Louis Allis Adjustable Speed Magnetic Drive. Write for a copy of Bulletin 3650 — now available at your Louis Allis District Office, or from The Louis Allis Co., 439 E. Stewart Street, Milwaukee 1, Wisconsin.

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MANUFACTURER OF ELECTRIC MOTORS AND ADJUSTABLE SPEED DRIVES

#### **Purchasing Follow-up**

#### See Steel Consumption Rising in 2nd Half

"Steel consumption will increase as the year progresses," says Joseph L. Block, chairman of Inland Steel Company.

Block notes that "with inventories at desired levels, we expect steel production to rise by late summer and to reflect satisfactory, but surely not peak, rates throughout the latter months of the year."

The Inland chairman added that, "While I have lowered my sights for 1960, I still expect it will be one of the industry's best production years." He anticipates "a bare possibility of topping the 1955 record ingot output of 117 million tons."

Block says that his "present estimate is that production in the second half will aggregate 54 to 57 million tons, bringing the year's total into a range of 115 to 118 million tons." If this happens, he predicts the operating rate for the second half "would be in the middle seventies, and for the year as a whole in the high seventies."

He says that "among major steel-using industries, consumption is holding up reasonably well and a few show some signs of gaining strength. Rising business spending on new plant and equipment means increased activity in the construction and machinery markets."

The steel executive also observes that "steel customers appear to have completed or to be about to complete their inventory adjustments. Very shortly, steel production should reflect the rate of steel consumption, and this should continue for the remainder of the year."

#### NICB Study Surveys Small Order Problem

The problem of small orders can be partially solved by passing on costs to purchasing agents, according to a new Study in

Business Policy released by the National Industrial Conference Board.

The NICB says that "small orders can be a costly drain on a company's resources, unless management is successful in finding ways to reduce their number or their cost. If small orders account for a sizeable proportion of the company's total transactions, their control can be of considerable importance."

Among the types of small orders listed by the Board are those for: repair parts, replacement parts, emergencies, new products, new sales accounts, and drop shipments.

NICB found that the 254 companies participating in the survey solve the small order problem by one or more of these approaches:

- (1) Pass on to the purchasing agent at least a portion of the additional cost of filling small orders.
- (2) Encourage P.A.'s to purchase in large quantities.
- (3) Attempt to reduce the cost of filling small orders.
  - (4) Try to reduce the number

of small orders and small ac-

(5) Refuse to accept small orders.

The survey describes how price differentials are used widely as weapons to attack small orders. Suppliers were found to use one or more of these pricing techniques: net price differentials, quantity discounts, quantity extras, bonuses rewards, and allowances, and service charges.

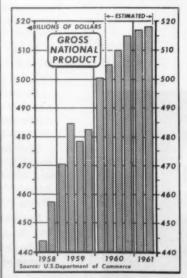
Another method of increasing the size of orders is by requiring purchasing agents to pay freight charges on all shipments below a certain size.

The complete study, Number 94, is available from the NICB, 460 Park Ave., New York 22, N. Y. The cost to members of the Board is \$2 and to non-members is \$10.

#### Military Purchasing of Metals Is Centralized

Most metals purchases of the armed services will be made by a single agency—the Military Industrial Supply Agency—beginning in 1961. (Turn Page)

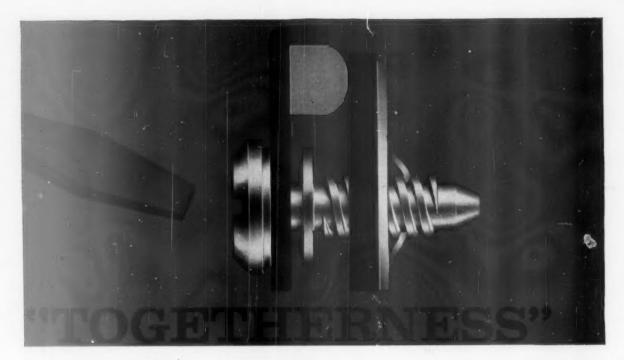
#### Predict \$518 Billion GNP



The U.S. Gross National Product—a measure of total goods and services—is expected to reach \$518 billion by the second quarter of 1961.

In the first quarter of this year, the GNP stood at \$500.2 billion. President Eisenhower recently reported that preliminary estimates indicate that GNP hit a record \$503 billion in the second. However, the second quarter gain is only a 1% increase over the first.

Some government and industry economists say that the crucial point in the next few years is the middle of 1961. At that time, they indicate, the possibility of a recession is the strongest.



## is a lasting benefit when you fasten with aluminum

You can expect two big advantages when you switch to aluminum fasteners: a fastening that stays strong . . . improved product quality and appearance.

Unlike many fasteners made of other metals, aluminum fasteners resist corrosion and do not form the destructive oxide called rust. The colorless oxide formed on aluminum is a protective shield which resists further oxidization and corrosion. The life of the fastening is actually prolonged when you use aluminum fasteners.

Some metallic fasteners must be coated to prevent corrosion, and these coatings can be damaged in production, opening the way for product deterioration. Aluminum fasteners stay strong and clean; they need no protective coatings. However, aluminum can take a wide range of finishes to meet virtually any product design requirement.

Unlike other metals, aluminum won't stain or weaken because of rust. Parts and products are not only fastened firmly, they stay good looking longer.

Be sure all aluminum parts are fastened with aluminum fasteners. Dissimilar metals sometimes set up damaging corrosion, rust, deterioration, and weakened fastenings.

The next time you specify fasteners for any metallic, wood, or plastic part, consider aluminum and aluminum quality. If you would like further information on aluminum fasteners, write to Reynolds Metals Company, Box 2346-NB, Richmond 18, Va.

Reynolds does not make aluminum fasteners, but does supply the finest quality aluminum to the fastener industry...write today for the names of leading manufacturers.



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#### **Purchasing Follow-up**

At present, the Army, Navy, Air Force, and Marine Corps do their own metals buying. With the extension of the single manager plan, ferrous and nonferrous metals purchasing will come under the MISA.

The Department of the Navy is the single manager for industrial supplies and will control the metals buying. The Philadelphia headquarters of the MISA will be set up to handle metals buying, storing, and distributing.

Not every type of metals purchase will be taken over by MISA. Those for a few specialized areas, such as R&D or weapons systems, will remain under the control of the particular military service handling the program.

Although the Navy Department will be in overall control of the MISA, personnel from the other services will be assigned to the agency.

Executive director of the Military Industrial Supply Agency is Captain John W. Bottoms, USN.

## **Bulk Plastic Shipments Made to West Coast**

The first bulk rail shipment of a plastics raw material to the Pacific Coast area has been received.

The shipment of 115,000 pounds of Tenite polyethylene resin was supplied by Eastman Chemical Products. Purchaser was Santa Ana Plastic Film, a division of Rexall Drug and Chemical Co.

This delivery inaugurated the operation of a new bulk receiving and storage system at the Santa Ana plant. Previously its polyethylene was shipped in 50-pound bags in trucks.

The rail shipment reduces the shipping time for the raw material considerably. It also saves time and labor in handling at both supplier's and buyer's plants.

In Santa Ana, the resin is conveyed from the transfer car to a storage system via an automatic unloading system. Nine 50,000-pound capacity silos have been

installed to handle future bulk shipments.

Gravity lines from each of the silos convey the polyethylene to the sub-basement of the plant, where it is placed in portable sealed containers. These containers are connected directly to the extrusion machines located on the floor below.

#### GSA to Sell Crude Rubber from Stockpile

The General Services Administration has begun a program to make the sale of crude natural rubber from the stockpile competitive with freshly produced and imported natural rubber.

Approximately 70,000 tons of rubber have been sold up to now, said the GSA. This leaves a balance of approximately 400,000 tons to be sold under long-range disposal authorization over a period of about nine years.

While the quantities of each grade available for the sale will vary from time to time, present plans call for the following sales:

- 200,000 tons of No. 3 ribbed smoked sheets.
- 100,000 tons of No. 2 ribbed smoked sheets.
- 30,000 tons of pale latex
- 70,000 tons of No. 1 ribbed smoked sheets.

#### New Calculator Rents For Under \$1000/Month

A new transistorized punched card calculator is on the market—the first to be offered at a rental of less than \$1000 a month.

The machine, known as the 609 B-1, is made by the data processing division of International Business Machines Corporation. It rents for \$735 to \$1089 per month and sells for \$36,000 to \$50,390.

The 609 B-1 is geared to the needs of small users and small purchasing departments. It has the same processing and input-output speeds as the larger 609,



#### ASK THE MAN FROM THE NORTHERN PLAINS

When you need parts, processing, assemblies, we can locate new sources for you. Northern Natural Gas Company, Omaha, Nebr., has catalogued for instant reference by electronic methods, information about the production capacity of thousands of plants in the Northern Plains. This detailed information has been gathered and tabulated by the private gas utilities of the area. Upon receipt of details regarding your requirements, we will be glad to suggest possible qualified suppliers located in the five state Northern Plains Area.

For Accurate Information about the Manufacturing Facilities available in the Northern Plains, write Randall Klemme, Vice Pres., Northern Natural Gas Company, Omaha, Nebraska, or call Webster 7600.

This Unique Service is Yours ... Simply For The Asking

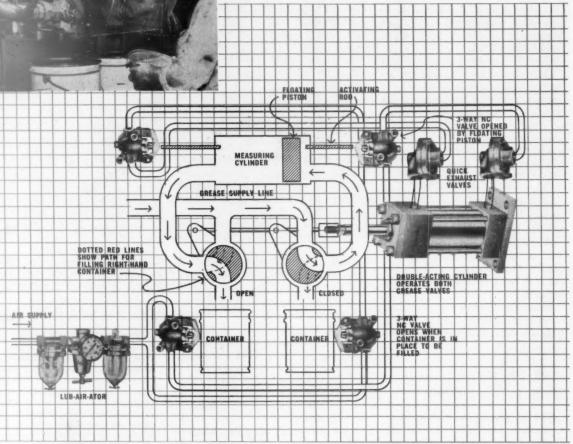


Serving the Northern Plains
Northern Natural Gas Company
General Offices: Omaha, Nebraska

For More Information Write No. 172 on Inquiry Card—Page 32



Here is an example of Schrader at work. Barrett Mfg. Co. of Houston, Texas, makes grease handling equipment for Mobil Oil's Brooklyn, N. Y., refinery. This machine fills 35 pound grease drums automatically accurately, 15 per minute! George Barrett, who designed and built this machine and other machines for Mobil, says: "My reputation for quality is too hard-won to risk by using some inferior line of air products."



# PACKAGING EQUIPMENT MAKER DESIGNS MACHINES TO ORDER...AUTOMATES THEM 100% WITH SCHRADER AIR PRODUCTS

In limitless combinations, Schrader Air Products are performing thousands of jobs in thousands of plants. Wherever jobs are messy, tricky, heavy, monotonous or complicated it pays to talk to Schrader.

Air is already available to you. Put it to work—on your own operations, or on the equipment you make for resale, like the company shown above. Just tick off its advantages:

high speed and accuracy, low cost and maintenance—plus safety, simplicity, dependability. Air can do almost anything fingers can—and many things fingers can't.

Both you and your customers want these benefits. Get them – and offer them – by actuating with Schrader – finest, most complete lines of Air Cylinders, Valves and Accessories.

Select from the full Schrader lines to plan your automation of machines. Your Schrader distributor can help you pinpoint what you need. For more data, write:



#### A. SCHRADER'S SON

Division of Scovill Manufacturing Company, Incorporated 457 Vanderbilt Avenue, Brooklyn 38, N. Y.

QUALITY AIR CONTROL PRODUCTS

For More Information Write No. 173 on Place Mark Card-Page 32

#### **Purchasing Follow-up**

but a smaller memory and fewer program steps.

Programmed by a single wire control panel, the calculator is equipped with 16 program steps. Additional steps may be ordered in increments of 16 up to a maximum of 64. The 609 B-1 makes available 84 positions of magnetic core storage. This can be increased in increments of three words to a maximum of 192 positions.

It can perform calculations at microsecond speeds. Both card reading and punching is at a basic rate of 200 cards per minute.

## New Rubber Consumption Falls to 132,710 Tons

U. S. consumption of new rubber in April totaled 132,710 tons—compared with 144,932 tons during the previous month.

Slightly over 90,000 tons of all types of synthetic rubber was consumed, about 7000 tons less than March. Synthetic consumption accounted for 68.18% of the total—marking a new high level.

Natural rubber consumption was 42,230 tons, down almost 5000 tons from the previous month.

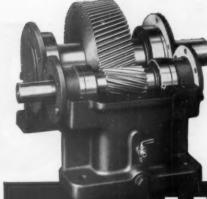
Reclaimed rubber consumption also declined around 2500 tons to 24,200 tons.

#### Carloading Increase Predicted for 3rd O

An increase of 15.3% in freight car loading has been estimated for the third quarter.

The prediction was made by the 13 regional Shippers Advisory Boards in reports to the car service division of the Association of American Railroads. Abnormally low carloadings were recorded in the 1959 third quarter, however, because of the 116-day steel strike.

On the basis of this estimate, freight carloadings of the 32 principal commodity groups surveyed will be approximately 6,390,683 in the upcoming quarter. In the third quarter of 1959, carloading totaled 5,543,460.



# Fast Delivery on Custom Requirements

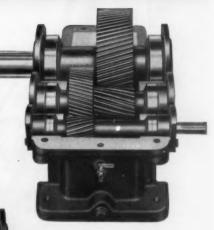
Specify - & S

Helical Speed Reducers

Single · Double · Triple Reduction

You get fast action when you come to Horsburgh & Scott with your speed reducer and gearing problems

We are able to meet your specifications—or design and build to your specific needs—products of highest quality, backed by the experience and reputation of many years as leaders in the gearing field.



Maintaining one of the largest stocks of patterns and blanks . . . special equipment and special tooling—much of it designed and built in our own plant—enables us to engineer and produce a wide

range of custom gearing and transmission requirements, economically and practically as fast as you can obtain them from stock sources.

### Overall design conforms to SAGMA specifications

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Write for details on wide size and capacity range of H&S Speed Reducers—Helical, Herringbone, Worm Gear and combinations.



#### The HORSBURGH & SCOTT CO.

5112 Hamilton Avenue . Cleveland 14, Ohio

Specializing In fast production of quality Speed Reducers and Gearing to meet custom requirements.

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# BUY ALL FROM

Copper From .062" to 4.500" O.D.

Brass TUBE

From .1875" to 4.000" O.D.

aluminum TUBE

From .125" to 2.000" O.D.

Wolverine produces all three in a wide range of sizes and alloys, in straight lengths and coils, and in both finned and plain tube forms. When you're in the market for copper, brass or aluminum tube you can save time by making Wolverine your "buy" word. You obtain the product you need—made the way you want it—packaged to your exact requirements—and delivered when you want it.

Anticipating customer demands, and having the equipment, know-how and skilled employees needed to meet those demands, are all part of Wolverine's Tubemanship program. Wolverine customers can avail themselves of a wide range of specialized services in addition to various types of tubing.

Wolverine, for example, maintains complete fabrication facilities—is able to fin, spin, bend, coil—in short to do just about anything tubing customers require. From Wolverine's constant research program has come tubing specially designed to help solve the problems of such complex industries as refining, petro-chemical and petroleum processing, refrigeration and air conditioning—to name but a few.

For your convenience Wolverine maintains sales offices in 33 American cities. Complete information can be found in Wolverine's General Products Catalog. Write for your copy—TODAY.

TUBE

J-8894



## Calumet & Hecla, Inc.

DEPT. C 17250 SOUTHFIELD RD., ALLEN PARK, MICH.

Manufacturers of Quality-Controlled Tubing

PLANTS IN DETROIT, MICHIGAN, AND DECATUR, ALABAMA. SALES OFFICES IN PRINCIPAL CITIES
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## It gets discouraging at times, but...

You'll keep more of your people happy with pressure-sensitive tape supplies if you always remember to specify "SCOTCH" Brand.

"SCOTCH" Brand Pressure-Sensitive Tapes give you consistently top quality roll after roll . . . give consistent performance on the production line. And "3M-MATIC" Taping and Dispensing methods match the right tape to the best dispensing equipment for high-speed application. For complete information, contact your nearest distributor, or write: 3M Co., 900 Bush Ave., St. Paul 6, Minn., Dept. IAM-70.

When tape costs so little, why take less than

## SCOTCH BRAND

**Pressure-Sensitive Tapes** 

"SCOTCH" IS A REGISTERED TRADEMARK OF 3M CO., ST. PAUL 6, MINN.
EXPORTS 99 PARK AVE., NEW YORK IS, CANADA: LONDON, ONTARIO.

MINNESOTA MINING AND MANUFACTURING COMPANY
... WHERE RESEARCH IS THE KEY TO TOMORROW



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10,125 tests a day assure consistent quality in every Gulfo

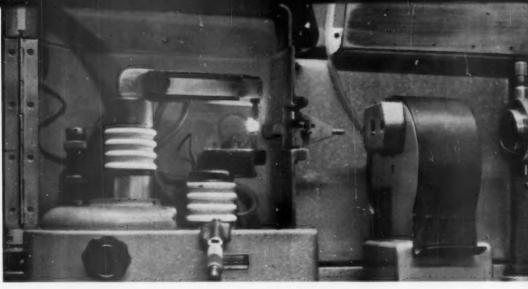
# GULF MAKES THINGS

Those bottles you see above contain samples of a variety of Gulf fuels and lubricants, each of which has been subjected to a series of scientific quality control tests at Gulf laboratories. Any one of the tags shown might carry the "pedigree" of a Gulf product your company bought today for use in its plants or motor fleet.

Product purity is policed constantly at Gulf. During the refining process, samples from *every* lot of Gulf gasoline, diesel fuel, lubricating oil and grease are tested and re-tested to make sure that formulations are exact and that impurities are essentially eliminated. For example, Gulfcrest\* 44, world's leading turbine oil, is quality-controlled to limit contamination to less than one part per million.

Every Gulf product you purchase bears positive evidence that it is precisely what you ordered. From the lot number on the container, your Gulf office can determine which refinery made the product and the day it was





Emission Spectrograph (above) causes undesirable elements in a petroleum sample to emit their characteristic light spectrum which is photographed on a strip of film. In the Densitometer (below) the spectrum on the film is evaluated to identify the presence of metal contaminants down to less than one part per million.



product you buy...

# **RUN BETTER!**

made. Laboratory inspection data is then available for each individual lot.

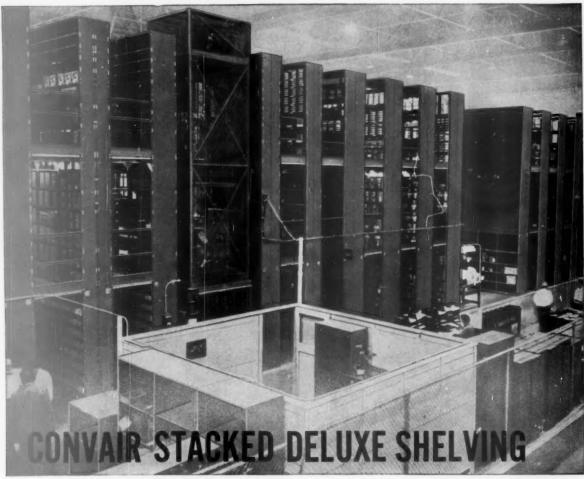
Gulf testing facilities are also used frequently to help Gulf Sales Engineers solve customer problems involving the use of petroleum products.

Get the complete quality protection that Gulf testing gives you. If your company uses petroleum products in any way, find out how Gulf makes things run better! Just call your nearest Gulf office.

# **GULF OIL CORPORATION**

Department DM, Gulf Building Pittsburgh 30, Pennsylvania





# to save 20,000 square feet of space and \$500,000 in parts handling!

Using a three-level "skyscraper" arrangement of Deluxe steel shelving, Convair compressed 34,000 square feet of valuable *storage* space into 14,000 square feet of *floor* space.

The shelving holds an estimated \$11,000,000 worth of vital small missile parts previously stored in a number of different buildings. The tremendous savings resulted from (1) reduction of storage floor space required, (2) elimination of fleet of trucks required for parts transfer, and (3) improved efficiencies in finding and handling parts to production.

This huge installation of Deluxe shelving, 642 standard sections bolted together, is completely self supporting.

The Atlas missile builders stacked Deluxe up against all competitive makes, and chose Deluxe shelving because of its greater strength, faster assembly and better appearance at the lowest installed cost.

Write today for more details on this installation and the complete line of Deluxe steel shelving. Deluxe Metal Products Division, Dept. 73-G.



DELUXE METAL PRODUCTS DIVISION • 1 PARK AVE. N.Y. 16, N.Y.







FOR 100% OF ALL METAL CUTTING JOBS

# Production-proved products of The Cincinnati Milling Machine Co.

CIMCOOL 52 Concentrate — The pink fluid which covers 85% of all metal cutting jobs.

CIMPERIAL — Newest in the famous, industry-proven line of CIMCOOL Cutting Fluids.

CIMPLUS — The transparent grinding fluid which provides exceptional rust control.

CIMCUT Concentrates (AA, NC, SS) — For every job requiring an oil-base cutting fluid.

ALSO — CIMCOOL Topping Compound — CIMCOOL Bactericide — CIMCOOL Machine Cleaner.

For full information on the complete family of CIMCOOL Cutting Fluids, call your CIMCOOL Distributor. Or contact Cincinnati Milling Products Division, Cincinnati 9, Ohio.

\*Trade Marks Reg. U. S. Pat. Off.





# AIR REDUCTION SALES COMPANY

A division of Air Reduction Company, incorporated 150 East 42nd Street, New York 17, N. Y.

More than 700 Authorized Airco Distributors Coast to Coast

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of Air Reduction Company, Inc.

These two Truarc Rings Q Q retain



these tiny





ball bearings on this

precision differential



eliminating



six parts. Result: THE DYNAMIC

GEAR COMPANY saves \$3,930 per 1000

units and cuts assembly time by 97%.

# PURCHASING PROPOSITION: Let Truarc help you reduce the assembled cost of

your product. Truarc engineers will be glad to make an in-plant appraisal of your fastening problems and show you how Truarc rings and assembly tools will solve them. Fast delivery of Truarc Rings is assured through a convenient

network of over 150 distributors. Send for Catalog RR 10-58. It shows many specific examples of ring applications in different fields. For immediate action call your nearest Authorized Truarc Distributor. He's as close as your Classified

Telephone Directory. Look under: "Rings, Retaining." 0.12





WALDES

JARC® RETAINING RINGS

PRODUCTS CAN BE IMPROVED

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JULY 18, 1960

39



# casting after casting

Meehanite's exclusive manufacturing process gives you posi-tive assurance of always getting clean, sound castings with uniform structure and properties in all sections . . . in every casting . . . in every group of castings. This ability to control quality and uniformity saves you time and money in your shop and results in dependable performance in service.

Avoid the risk of hidden defects which cause high machining costs and casting rejects. Don't take a chance on bargain prices or so-called "equivalents." Specify Meehanite metal and be sure of obtaining castings that do the job better.

There are 30 types of Meehanite metal—each made to its own structural constitution and possessing its own combination of engineering properties. Why not have a field engineer from a Meehanite foundry help you select the one type that will most completely meet your design and service requirements. Check the Meehanite foundries listed below for the one nearest you. You'll like doing business with a Meehanite foundry.

Write today for your free single copy of the Mechanite Wall Chart. It contains complete specifications on many types of Meehanite.

The American Laundry Machinery Co., Rochester, N. Y.

Atlas Foundry Co., Detroit, Mich. Banner Iron Works, St. Louis, Mo. Barnett Foundry & Machine Co.,

Irvington, N. J.

Casting Service Corp., LaPorte, Indiana and Bridgman, Michigan Centrifugally Cast Products Div., The

Shenango Furnace Co., Dover, Ohio Compton Foundry, Compton, Calif.

The Cooper-Bessemer Corp., Mt. Vernon, Ohio and Grove City, Pa.

Crawford & Doherty Foundry Co., Portland, Ore.

Dayton Casting Co., Dayton, Ohio

Empire Foundry Co., Tulsa, Okla. Florence Pipe Foundry & Machine Co., Florence, N. J.

Fulton Foundry & Machines Co., Inc., Cleveland, Ohio

General Foundry & Mfg., Flint, Mich. Georgia Iron Works, Augusta, Ga.

Greenlee Foundries, Inc., Chicago, III. Hamilton Foundry Inc., Hamilton, Ohio

Hardinge Co., Inc., York, Pa.

Johnstone Foundries, Inc., Grove City, Pa. Kanawha Manufacturing Co.,

Charleston, W. Va. Kennedy Van Saun Mfg. & Eng. Corp., Danville, Pa.

Lincoln Foundry Corp., Los Angeles, Calif.

Oil City Iron Works, Corsicana, Texas Palmyra Foundry Co., Inc., Palmyra, N. J. The Henry Perkins Co., Bridgewater, Mass. Pohlman Foundry Co., Inc., Buffalo, N. Y. Rosedale Foundry & Machine Co., Pittsburgh, Pa.

Ross-Meehan Foundries, Chattanooga, Tenn. Sonith Foundries of FMC, Indianapolis, Ind. Standard Foundry Co., Worcester, Mass. The Stearns-Roger Mfg. Co., Denver, Colo.

Vulcan Foundry Co., Oakland, Calif. Washington Iron Works, Seattle, Wash. Dorr-Oliver-Long, Ltd., Orillia, Ontario

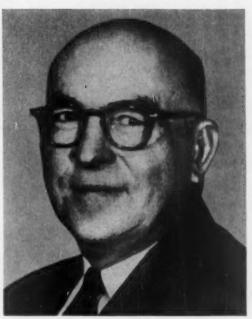
Hartley Foundry Div., London Concrete Machinery Co., Ltd., Brantford, Ontario Otis Elevator Co., Ltd., Hamilton, Ontario

MEEHANITE METAL CORPORATION, NEW ROCHELLE, NEW YORK

"Small wonder the Yellow Pages are a habit here at our buying office. Just recently we decided to have some broken forklift pallet platforms repaired at one of our plants. Until then, we had always replaced them. Through the Yellow Pages, we found a local shop that

# "WE USE THE YELLOW PAGES DAILY TO FIND LOCAL SUPPLIERS FOR OUR 7 PLANTS,"

says Paul Boorse, Manager, Purchasing Dept., Congoleum-Nairn, Kearny, N. J.



now does the work on a regular basis—at a considerable saving to us.

"Buying for all our plants along the Eastern Seaboard is done here at Kearny. So, for economy and company good-will, we try to find suppliers for the plants right in their respective localities. How? Through the local Yellow Pages."

Use the Yellow Pages regularly to find new suppliers. Telephone directories for the cities where you have plants and offices are easily available. Call your local Bell telephone business office.



America's buying guide for over 60 years!



In this 1960 LEWYT Vacuum Cleaner, Flexible Tubing does two important jobs: (1) it carries dirt, (2) it conducts electricity

# Proof that today's designers can make Flexible Tubing do almost anything

In the new Lewyt Vacuum Cleaner, Model 121, a motorized head revolves brushes that beat out and sweep up the dirt. How to get power to this Motorized Beater Sweeper — without unsightly wiring — posed a problem. Solution: Flexible Tubing's "Vac-U-Flex" vinyl hose.

Solution: Flexible Tubing's "Vac-U-Flex" vinyl hose. It carries the dirt — and conducts the current through a unique double-coil wire reinforcement *inside* the hose wall. Neat... simple... efficient — and styled to match the machine. Perfect example of the design versatility you get with Flexible Tubing!

If your firm manufactures any kind of original equipment where the handling of air, liquids or light solids is a problem, Flexible Tubing Corporation can help you with reliable products . . . years of manufacturing experience . . . fast, dependable delivery . . . technical assistance whenever and wherever you need it. To find out what Flexible Tubing can do for you, consult your Flexible Tubing regional sales engineer—or write Flexible Tubing Corporation, 117 New Whitfield Street, Guilford, Connecticut.



To find out more about Flexible Tubing Corporation and its many products, send for free brochure:



Anaheim (Los Angeles) • Guilford, Connecticut Hillside (Chicago)

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For More Information about ad on facing page Write No. 185 on Place Mark Card—pg. 32→ PURCHASING



SECURITY GUARD... that's the particular job this Sefton Fibre Can is doing. Protecting brand-name merchandise against counterfeiting. In this case, it's a famous auto part which cannot be replaced by a shoddy substitute. When any product comes in this string-opening package with the seal unbroken, the buyer knows he's getting the genuine article. To pack it—move it—sell it is the business of CCA packaging.

CONTAINER CORPORATION OF AMERICA

Chicago 3... and all key marketing areas





# Face up to the true cost of inventories

\$253.50 in interest alone. That's what it would have cost our customer to stock the steel for his order of these 5-16" gage tube sheets—had he decided to blank and punch these shapes in his own plant. His plate stock cost would have been \$25,350. The interest cost of carrying this for 90 days at—say 4%—is \$253.50.

Fortunately, the customer took advantage of Lukens Steel Plate Shapes Service and avoided tying up his capital in plate inventory. Plus: he paid no freight charge on the 50% scrap involved... instead he was given an allowance for the scrap at high steel mill prices. He avoided the expense of scrap handling. He eliminated shop spoilage.

Moral: Don't tie up capital in steel plate inventories. Contact Lukens for Steel Plate Shapes Service... flame cutting, shearing, blanking, pressing, bending, welding—of carbon and alloy plate produced on our own rolling mills. Call or write Fabrication Building, Lukens Steel Company, Coatesville, Pennsylvania. Address Dept. EE70.





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# STEEL PLATE USERS:





This informative free booklet tells you how to take advantage of Lukens Steel Plate Shapes Service to cut your costs. Send in the reply card for your copy today.





# BUSINESS REPLY CARD

FIRST CLASS PERMIT NO. 62, SEC. 34.9 P. L. & R. COATESVILLE, PA.

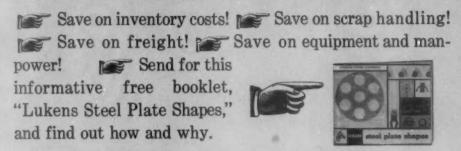
LUKENS STEEL COMPANY

**384B Fabrication Building** 

Coatesville, Pennsylvania



# STEEL PLATE USERS! YOU CAN . .



Please send me your	free booklet,	Lukens	Steel
Plate Shapes.			
Name	Title	15 8	
Company			
Address			

Zone

State

City\_



# Information For Your Catalog Files

### **ALUMINUM**

A 20-page buyers guide to aluminum. Contains selection data on coil, sheet, plate, tubing, pipe, rod, and bar available from stock. Federal specifications, analyses, mechanical properties, tolerances, machinability ratings, finishes, corrosion resistance, and relative costs of alloys are included.

Joseph T. Ryerson & Son, Inc.

Write No. 1 on Place Mark Card-Page 32

### CAPACITORS

Bulletin GEA-7085 describes Tantalytic foil capacitors, rated 125C. Includes data on electrical performance and construction features. Life test tables compare capacitance and power factor vs time.

General Electric Company

Write No. 2 on Place Mark Card-Page 32

# CONVEYOR CHAINS

Bulletin 6061 describes the Rex line of flat-top conveyor chains. Also outlines operating advantages of other chains, including those that curve around corners and move up and down moderate inclines.

Chain Belt Company

Write No. 3 on Place Mark Card-Page 32

#### DIAMOND WHEELS

Catalog #720 describes diamond wheels and tools. Lists standard types of wheels, furnished in either man-made or natural diamonds. Also covers special types or shapes made to specification.

Delta Diamond Wheel Corp.

Write No. 4 on Place Mark Card-Page 32

#### DRILL PRESSES

Bulletin 100M covers a line of 20-inch power feed drill presses. The illustrated 12-page catalog includes descriptions of models available, specifications, motors, motor controls, and a listing of accessories.

Rockwell Manufacturing Company

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### GRINDING WHEELS

A four-page color brochure on disc grinding wheels. Lists desired characteristics for efficient production. Includes photographs and specific recommendations.

Macklin Company

Write No. 6 on Place Mark Card-Page 32

#### HAND TRUCKS

Catalog SS-954 covers a line of counterbalanced high-lifting battery-powered hand trucks. The six-page two-color illustrated bulletin furnishes dimensional and engineering specifications on four models of operator-led trucks with capacities of 1500, 2000, 2500, and 3000 pounds. Includes tables on lift speeds, capacities at various load centers, and travel speeds.

Clark Equipment Company

Write No. 7 on Place Mark Card-Page 32

#### MINIATURE BEARINGS

Catalog 60-04 covers sintered bronze miniature precision bearings. Includes design features, available styles, specifications, applications, and installation procedures. Has a pre-calculated load-speed rating method of determining allowable bearing loads for any size bearing and shaft speed.

Northfield Precision Instrument Corp.

Write No. 8 on Place Mark Card-Page 32

#### MOLD RELEASE OILS

A technical bulletin on mold release oils for zinc and aluminum die casting. Summarizes the conditions under which each type of oil should be used. Also lists advantages of each type.

Sun Oil Company

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# PIPE INSULATION

Bulletin J-660 covers thermal and physical characteristics of a one-piece pipe insulation for service from below zero to 350 F. The four-page two-color catalog describes and illustrates application and handleability. Tables present available sizes and thicknesses according to nominal pipe sizes and actual pipe O.D.'s.

Baldwin-Ehret-Hill, Inc.

Write No. 10 on Place Mark Card-Page 32

#### **FOLYETHYLENE**

A 20-page brochure on applications of high density polyethylene. Over a hundred photographs illustrate many commercially successful uses. A brief description of the finished article and its method of fabrication accompanies each picture.

W. R. Grace & Co.

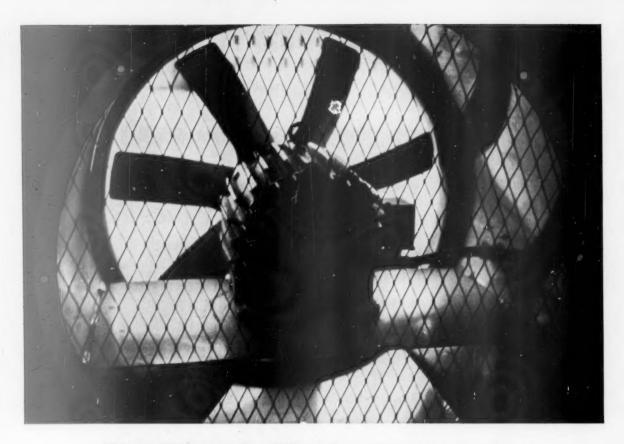
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# POWER SUPPLIES

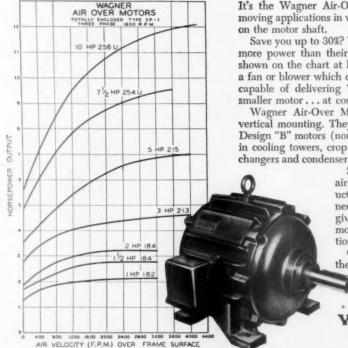
Form 3114-9 describes a line of high voltage power supplies. The eight-page two-color bulletin pictures main components in the broad range of single and dual units for operation up to 5000V. Includes suggested applications and lists detailed specification data for selection.

Victoreen Instrument Company

Write No. 12 on Place Mark Card-Page 32



# This Wagner Motor can save you up to 30% in costs on air-moving equipment



It's the Wagner Air-Over Motor... specifically designed for air-moving applications in which a propeller or axial flow fan is mounted on the motor shaft.

Save you up to 30%? Yes, for Wagner Air-Over Motors can deliver more power than their rated horsepower output. For example, as shown on the chart at left, a 5 horsepower rated motor installed in a fan or blower which delivers about 4,000 feet of air per minute is capable of delivering 7 horsepower. You get more work from a smaller motor... at costs up to 30% less.

Wagner Air-Over Motors are suitable for either horizontal or vertical mounting. They are totally-enclosed, nonventilated NEMA Design "B" motors (normal torque—normal slip). You can use them in cooling towers, crop dryers, exhaust systems, air-cooled heat exchangers and condensers . . . any air-over fan and blower application.

Specify Wagner Air-Over Motors for all your air-moving equipment applications. Your products will operate at peak efficiency for years, need less service and fewer repairs. And, you'll give your customers equipment powered by motors they know...motors that have a reputation for long, dependable service.

Call your Wagner Sales Engineer now...get the whole Wagner Air-Over Motor story. There are Wagner Branches in 32 principal cities across the country.

Wasner Electric Corporation

6360 Plymouth Ave., St. Louis 33, Mo.

WH60-13



CHECK OIC FIRST ... IT PAYS!

attained in the valve business. At OIC we've worked for more than three-quarters of a century, with one unbroken chain of ownership-management, constantly guarding our standards of quality in materials, design, engineering, craftsmanship, and inspection. This long-standing reputation is reflected in the caliber of your nearby OIC distributor . . . a "quality house" with its own highly valued reputation. When you need valves and must be certain of quality, sight unseen, it will pay to phone your OIC distributor. He carries a representative stock of OIC bronze, iron, ductile iron, cast and forged-steel valves . . . and he can get 4 to 5-day delivery from OIC's warehouses or factory inventory. Since quality is a "must," and delivery is urgent, phone your OIC distributor. Quality products and prompt service are his business, and ours.



FORGED AND CAST STEEL, BRONZE, IRON AND DUCTILE IRON VALVES

THE OHIO INJECTOR COMPANY . WADSWORTH, OHIO

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Right! Whether it's a routine order or an emergency request for unusual or hard-to-get sizes, Foster gives you pipe "plus."

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### **PUMPS**

Bulletin #100 covers progressing cavity pumps. The 20page catalog gives characteristics and operation, as well as engineering data and selection tables. Photos, dimension drawings, and specifications are included.

# Robbins & Myers, Inc.

Write No. 13 on Place Mark Card-Page 32

# REFRACTORIES

A four-page data brochure describes many types and classes of refractories. Includes recent brands, such as silicon carbide brick and shapes, basic refractories for oxygen steel vessels, and a new insulating fire-

### Harbison-Walker Refractories Co.

Write No. 14 on Place Mark Card-Page 32

#### SEALS

Bulletin AD-150 describes compact, ready-to-install seals. Illustrated with sectioned and lined drawings, the catalog outlines temperatures, pressures, and shaft speeds.

#### Garlock, Inc.

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# SEMICONDUCTORS

A 12-page catalog on semiconductors. Includes basic specifications of a new line of VHF transistors manufactured by the PADT process for converter, mixer, and oscillator applications. Also lists germanium and silicon reference and power rectifier types.

### Amperex Electronic Corp.

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# SOCKET CAP SCREWS

Bulletin 773 gives specifications for socket cap screws. Includes tables of standards, concentricity limits, threading dimensions.

### **Bristol Company**

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300% greater holding power than other pressure-sensitive labels.

NOW—the tightest sticking pressure-sensitive label on the market...

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Avery's new Golden perma-grip Labels open the door to the wider, more effective use of pressure-sensitive labels. Many applications long considered too difficult for this type of label are now practical and economical. Easily and quickly applied to a variety of packaging surfaces - either flat, rounded, concave or curved . . . these new Avery Golden perma-grip Labels stick better and hold tighter to glass, plastic, wood, film, metal or paper - to all types of packaging materials.

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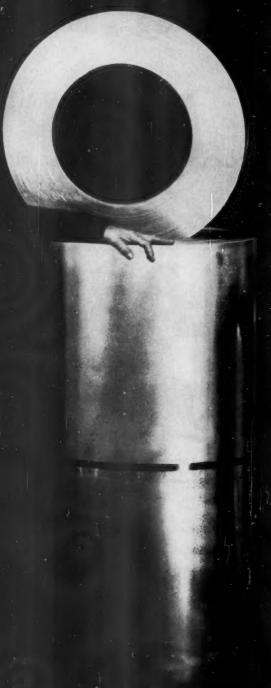
Name\_\_\_\_\_Company\_\_\_\_\_Address

Have you seen Avery's new pressure-sensitive Metallics for decorative trim, panels and identification plates?

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# The Aluminum Man\*...

Six years as an aluminum-for-industry enthusiast. Earnest J. Keys—Alcoa Distributor Salesman for Meier Brass & Aluminum Co., Detroit, Mich.—is another of the proud men who make service to industry their careers, through knowledge of aluminum.



# He helps cut your finished cost on sheet products

Aluminum coiled sheet in the broadest range of sizes, types and finishes in the industry . . . available from local warehouse stocks. That is why you can now receive fast delivery from your local Alcoa Distributor Salesman-The Aluminum Man!

Light in weight, high in strength and easy to workproduced to the highest standards of quality control-Alcoa® Aluminum Coiled Sheet can effectively reduce handling, labor and production costs. And less factory fabrication means lower finished cost, too!

Check The Aluminum Man-he'll help you determine how and where you can improve stamping machine operations by drawing on the knowledge acquired by Alcoa in more than 60 years of pioneering new aluminum uses. His aid and advice are yours for the asking, whether you buy a few pounds or a few thousand pounds of Alcoa Aluminum . . . the light metal with the bright future that's being seen in more places . . . more and more! Aluminum Company of America, 936-G Alcoa Building, Pittsburgh 19, Pa.

Call The Aluminum Man. He's your Alcoa Distributor Salesman for sheet, tube, shapes, screw machine stock and other Alcoa Mill Products.





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Los Angeles 22
\*Pacific Metals Co., Ltd.
(Raymond 3-5431)
Tubesales (Tube and Pipe)
(Raymond 3-7781)

(Haymond 3-7781)
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IDAHO Pacific Metal Co. (3-6468) \*Home Office

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Eastern Metal Mill Products Co.
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\*Marsh Steel & Aluminum Co.
(Grand 1-3505)
Metal Goods Corp. (Grand 1-3516)

St. Louis 14

\*Metal Goods Corp. (Harrison 7-1234)

St. Louis 10

Steel Sales Co. of Missouri, Inc.
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NEW JERSEY Elizabeth

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Jones & Laughlin Steel Corp. Strip Steel Division (Murdock 6-6900)

**NEW YORK** Albany 1

\*Eastern Metals Warehouse, Inc. (89-3281)

Buffalo 7 Brace-Mueller-Huntley, Inc. (Victoria 8700) Whitehead Metals, Inc. (Bedford 3100)

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Charlotte 6 Edgcomb Steel Co. (Franklin 5-3361)

Greensboro Edgcomb Steel Co. (Broadway 5-8421)

> OHIO Cincinnati 16 Central Steel and Wire Co. (Avon 1-2230) Cincinnati 29

Williams and Company, Inc. (Capitol 1-3000) Cleveland 2 \*A. M. Castle & Co. 4510 Division Avenue (Atlantic 1-5100)

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Philadelphia 34
\*Edgcomb Steel Co. (Garfield 3-6300)

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Metal Supply Co. (Center 6-0220)
Philadelphia 40
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TENNESSEE Memphis 6 Metal Goods Corp. (Whitehall 8-3407)

TEXAS Dallas 9

Metal Goods Corp. (Fleetwood 1-3271)

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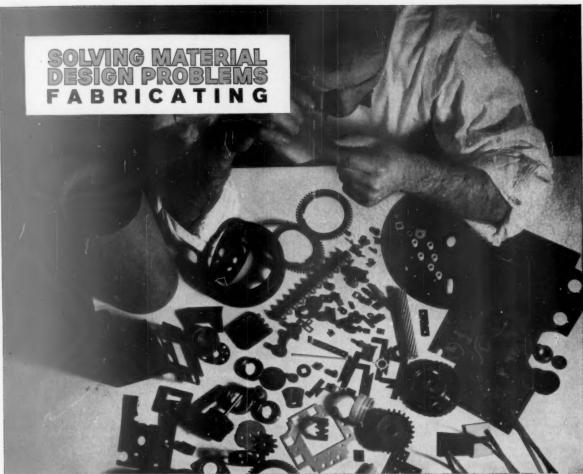
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Pacific Metals Co., Ltd. (Davis 2-3461)

WASHINGTON Seattle
Ducommun Metals & Supply Co.
(Parkway 5-1500)

Seattle 4 Pacific Metal Co. (Main 2-6925)

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Buy the parts not the problems. From large and unusual shapes to parts so small you inspect with a jeweler's glass...CDF's special fabricating facilities can do your job faster, more economically. Every part shown above is fabricated by CDF, except the etching of the printed circuits.

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of the many types of materials that we produce. Most important of all, you can combine economy with the exact properties you're looking for. CDF offers you a choice of materials from the industry's widest selection of laminated plastics, vulcanized fibre and electrical insulating materials. Check your Sweets PD file or write for General Folder 60.





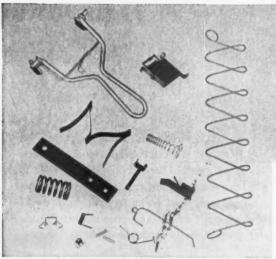
Machining low-cost tracks for sliding glass doors. Made by CDF from Diamond vulcanized fibre. It's tough, yet light in weight.

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# From Hunting to Hi-Fi . . .

# There's a Spring in your Hobby



HUNTING - Ammunition clips, trigger springs and gun parts for civilian and military use; even a precision sling shot frame.





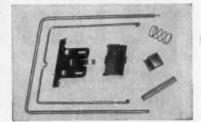
mute springs, guitar levers, springs for cornets, pianos, organs.



FISHING — power springs for reels; wire and flat springs for rod holders, lures; and a frog holder frame.



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By some miracle, the leaning tower of Pisa has kept standing several hundred years. But nobody should depend on a miracle to keep a leaning stack of boxes standing in a warehouse.

So we take great pains to make sure stacks of our boxes do not lean-even if a warehouseman piles them up as carelessly as our photographer did.

How do we do it?

It's seldom easy, but we start by learning how, when and where the boxes will be used, and engineering them accordingly. By providing adequate compression strength through good design and proper material specifications. By using the best-suited manufacturing techniques, including the right types of scoring.

Being this fussy about corrugated boxes may seem strange to businessmen who have never thought much about these things. But the way your boxes "stack up" can be mighty important to your profit picture.

MILLS:

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# CONTAINER CORPORATION Corrugated Fiber Containers

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# **Letters To The Editor**

# SUCCESSFUL VALUE ANALYSIS

Dear Sir:

Your May 23 issue devoted to value analysis and the Ford Falcon was most informative for our company. We found several ideas which we believe we can use.

J. F. Doris, Purchasing Agent Schlegel Manufacturing Company Rochester 1, New York

#### Dear Sir:

I enjoyed having your nice comments about our Ford Division purchasing department.

> Henry Ford II Ford Motor Company Dearborn, Michigan

#### DEAR SIR:

PLEASE SEND 100 REPRINTS OF FORD VALUE ANALYSIS ISSUE.

> C. B. BJORLING BOEING AIRPLANE CO SEATTLE, WASH.

#### Dear Sir:

We were greatly interested in the article on "Ford's Cost Control Center" which appeared in the May 23 issue of Purchasing Magazine.

> Garvin A. Drew, Vice President A. Schrader's Son Brooklyn, New York

# Dear Sir:

Your staff did an excellent job of compiling, editing and presenting "Ford's Purchasing Story." We hope that the material will contribute to the knowledge and stature of the purchasing field.

J. O. Wright,
Vice President
Ford Division,
Ford Motor Company
Dearborn, Michigan

#### Dear Sir :

It is only a story such as this ["Value Analysis And The Ford Falcon"] that can bring into proper focus the tremendous potential contribution which a well-staffed

and qualified purchasing organization can bring to a company's products.

> Irving A. Duffy Vice President Ford Motor Company Dearborn, Michigan

#### Dear Sir:

Please send 15 reprints of your very excellent article on the Ford Motor Company's cost control center which appeared in the May 23 issue.

Robert F. Swift International Budd Division Philadelphia, Penna.

#### Dear Sir:

May I compliment you on the recent value analysis issue of Purchasing Magazine. It has already proven to be most helpful and informative to me.

Owen A. Barnes, Purchasing Agent Stetson—Ross Seattle, Washington

### THE NAVY WAY

Dear Sir:

The Ohio State University Research Foundation will soon begin working with the Office of Naval Material on an educational program in price analysis for Naval personnel.

May we have permission to reprint an article which appeared in PURCHASING Magazine, (January 5, 1959) entitled "How to Know When To Make Or Buy," written by Norman P. Levine.

We wish to distribute approximately 600 copies of this article during the next 15 months to Navy personnel attending this course.

This article, we are sure, will make a substantial contribution to the success of this course.

> Charles J. Gaisor Ohio State University Wright-Patterson AFB, Ohio

• The editors of Purchasing Magazine are delighted to be able to cooperate with the Navy and Ohio State—permission granted.

# Reprinted by popular demand



- Lists trouble symptoms and remedies on easy-to-use chart.
- Helps you select properly matched components.

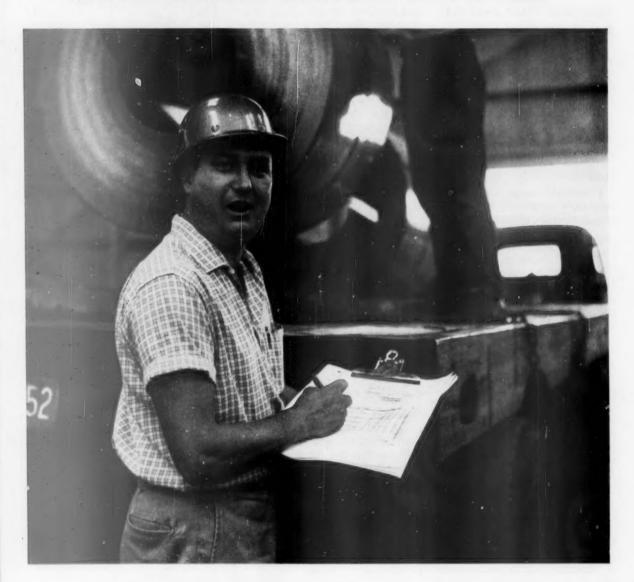
This new G-E guide is a handy reference chart for maintaining your present system...and more! It helps you to determine whether, and how, improvements can be made in the combination of lamps, starters, ballasts, etc., that you have now...to deliver more of the type of light you require, at lower cost. It brings up points you may not have realized before, that can make your job easier.

Ask your General Electric distributor for the new G-E Maintenance Guide for Fluorescent Lighting, or write General Electric Company, Wiring Device Dept., Providence 7, R.I.

# GENERAL & ELECTRIC

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# "NO RED TAPE GETS BETWEEN ME AND YOUR ORDER HERE AT GRANITE CITY STEEL"



"You hear a lot about personalized service. At Granite City Steel we really mean it. Every order gets personal attention—from our salesmen and from the people at the mill who make the steel, inspect it, ship it. Teamwork. It's one of the advantages of doing business with specialists in flat-rolled steel. No red tape. Our customers like it that way. We'll prove it to you on your next steel order. Try us."



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# Purchasing People In The News

The Canton Malleable Iron Company, Canton, Ohio has named Jerry Romary purchasing agent and office manager. Mr. Romary was formerly the pump



Jerry Romary

sales manager of the Wagner Pump Division of the Canton Stoker Co. He has also been purchasing agent for Peerless Pump Division, Canton Food Machinery Corporation. He is a member of the Purchasing Agent's Association.

Steelcase, Inc., Grand Rapids, Mich. has appointed Albert C. Terrell director of purchases. Mr. Terrell has been with the company for 28 years. He is a member of the Grand Rapids Purchasing Agents Association.

Alex N. Telischak has been named as the new director of purchasing at Haloid Xerox Inc., Rochester, N. Y. Mr. Telischak succeeds Floyd W. Curtis who last month became a consultant for the firm after 38 years of service. From 1940 to the present, Mr. Telischak served as buyer, purchasing agent, assistant purchasing director and purchasing director for Edison Industries in West Orange, N. J. During World War II and the Korean War, he set up war production controls for material allocation for all divisions of his firm. Prior to joining Edison, he was chief accountant for Resistoflex Corp.

C. L. Sander became purchasing agent for Janitrol Heating and Air Conditioning, a division of Midland-Ross Corporation, Columbus, Ohio. Mr. Sander has served in various purchasing capacities with Janitrol since joining the firm in 1945. Previously, he performed similar duties for the Bendix Aviation Corporation.



C. L. Sander

Now enrolled in Janitrol's management development program, Mr. Sander recently completed a special course in purchasing given by Ohio State University. He is a member of the Columbus Association of Purchasing Agents.

The appointment of J. W. Hinchliffe as director of subcontract marketing for Northrop Corporation's Norair Division, Hawthorne, Calif. has been announced. Mr. Hinchliffe, former director of materiel, has been serving for the past several months as acting director of subcontract marketing. Carl W. Hood will succeed Mr. Hinchliffe as director of materiel. In his new position, Mr. Hinchliffe will direct Norair's subcontracting, subsystem and component marketing programs. In addition, he will head Norair's product diversification program. Mr. Hinchliffe joined Northrop in 1950 as director of materiel. He was responsible for complete reorganization and streamlining of the division's materiel section. Prior to joining the company, he served as director of materiel for North American Aviation, Inc., Inglewood, Calif., director of materiel for Aerco Corp., South Gate, Calif., and materiel manager for Shepherd Tractor and Equipment Company, Los Angeles. Mr. Hinchliffe received a B.A. degree in economics from Stanford University in 1932. He is a member of the Los Angeles Association of Purchasing Agents and the National Association of Purchasing Agents.

Edward R. Randall has been made manager, installation & service department, industrial and marine division, Walter Kidde & Company, Inc., Belleville, N. J. Formerly he was director of pur-



Edward R. Randall

chases for the industrial and marine division. At one time he was purchasing agent for Walter Kidde Constructors, Inc. in New York City. Mr. Randall is a graduate of the University of Kentucky.

SEE PAGE 236 FOR MORE PURCHASING PEOPLE IN THE NEWS

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is the originator and developer of the revolutionary new L-100-M

# SPEED-BAND®

double carbide
Band Saws



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available from authorized CAPEWELL Distributors





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# FOB-"filosofy of buying"

A GOOD PROFILE isn't a basic requirement for editors, but it helps in this age of high-powered public relations. Our own candidate for an Emmy, Features Editor Hal Barnett, is shown below being greeted by Jerry Wichser of WFIE-TV in Evansville, Indiana. Hal was in town for a speech to the Evansville Association and took the opportunity to interview Evansville's new purchasing agent, William Cravens. The Evansville Association made arrangements to have the interview conducted on television. Shown with Hal and Mr. Wichser are (1.) Herb Troyer, Bernardin Bottle Cap Co., president of the local association, and Mr. Cravens.



The wide, wide world of purchasing.

RECOMMENDED reading for P.A.'s:

• A new booklet, "The RCA Supplier—A Key Factor in RCA Quality", issued by H. E. Margolies, purchasing agent, communications products and E. W. Russell, purchasing agent, industrial electronic products, Radio Corporation of America, Camden, N. J. The booklet is designed to acquaint suppliers with RCA's policies and procedures in procuring materials.

• "The Challenge of These Changing Times," a handsome 40-page book on specialty steel. Excellent text and pictures make it the next best thing to a full-scale visit to the facilities of The Carpenter Steel Company, Reading, Pa.

• "Marketing for Profit," a bulletin from Stewart, Dougall and Associates, Inc., 405 Park Avenue, New York 22, N. Y. It explains in part who the industrial marketing researcher is and just why he has to ask the purchasing agent so many questions.

VI ADISON AVENUE commandos often justify some apparently hopeless course of action with the statement, "you can't fall off the floor." This come-up-fightingeven-though-you're-flat-on-yourback philosophy is apparently spreading to the steel industry if we are to believe the staid New York Times. "Steel Operations Continue to Drag" read the head on a recent news item. The subhead took another tack: "Morale Seen Rising Because Many Believe Conditions Can Only Improve." Further clarification came in the body of the story: "Morale improved in the steel industry last week but there were no statistics to support the new feeling . . . Most of the optimism was arrived at by assuming things could not be much worse from a new-order standpoint."

WE DON'T know what to blame it on—maybe the warm weather is causing it—but some unusual and offbeat comments have been turning up on our Purchasing Opinion Poll ballots. Samples:

"The purchasing agent in our company is rated lower than the office manager and at about half

the pay scale."

"We plan to keep all our buyers alert with young and attractive secretaries."

"If the management seems reliable, the company usually is also."

WANT TO RELOCATE in the South? A chemical company's classified ad in the Newark Sunday News a few weeks ago was headed PUHCHASING AGENT.

SALESMAN Reginald Stark caused quite a stir when he turned up at the Deming Company's plant in Salem, Ohio. His 1960 Vermont license plates carried the simple legend PUMP. Several New England states will (for a slight extra charge of \$5)

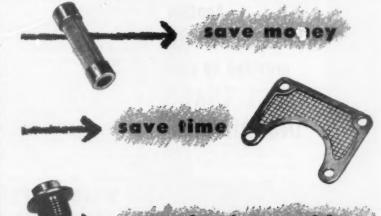


Suppose he sold hydrocinnamaldehyde?

issue plates of this type. One purchasing agent we know in New Hampshire used to draw a lot of attention when he drove his wife's station wagon about. His last name begins with A and her initials are B.R. It was a bit of a shock to see the special initial plate on her car.

# Special WIRE CLOTH PARTS









Newark is the place to come for your fabricated wire cloth parts. We can save you time and money. We weave our own wire cloth so you have no quality control problem. We take care of production scheduling . . . you have no idle manpower or idle machine time worries. We will give you a better part at a lower cost.

For more data on this phase of NEWARK Service, send for our Wire Cloth Parts Catalog. If you have an individual problem and would like to have us recommend the best way to insert the wire cloth piece send us tentative drawings and specifications. If you are ready to order, we'll be glad to quote.

NEWARK foraccuracy



# ewark Wire Cloth

351 Verona Avenue, Newark 4, New Jersey

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Another
PLUS VALUE
provided by your
TUBE TURNS
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Tube Turns' 12,000 stocked items comprise the world's broadest line of welding fittings and flanges. You can buy any of these on one order, from one source... your nearby Tube Turns' Distributor. This wide selection and prompt delivery simplify purchasing, assure matching of specs, reduce job delays, cut costs. Outstanding availability service is just one of the many Plus Values you get when you specify and buy top-quality Tube-Turn\* products. Others are shown here.

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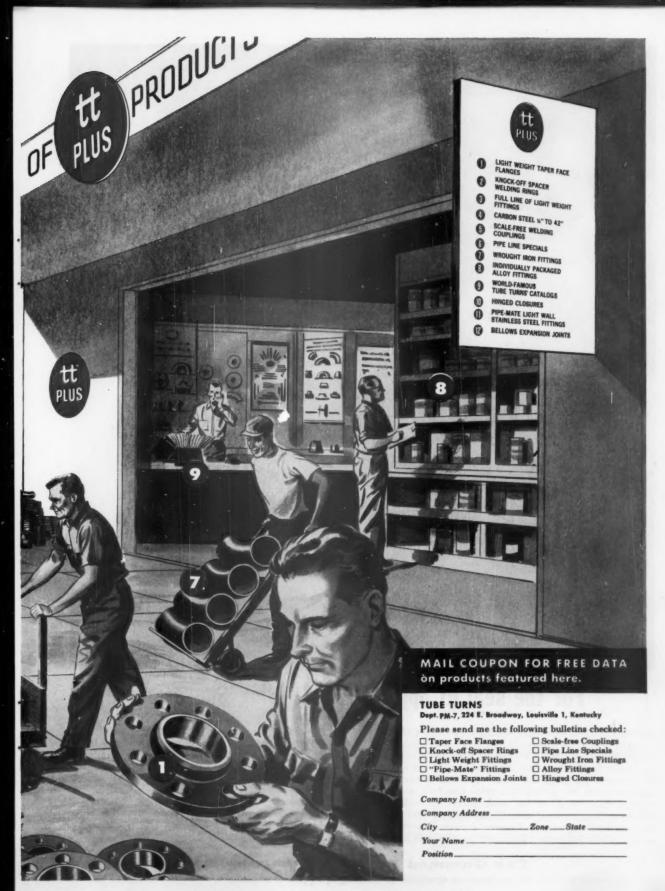
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# For the seal of approval... Sterling Supreme!

Sterling Supreme gummed sealing tape truly puts the "seal of approval" and quality on every packaging job. That's because Sterling Supreme gives you everything you want for the broadest range of carton sealing requirements. Its rugged strength and instant-bonding adhesive give you a tape that grips like iron, and resists scuffing at all carton weak points. In addition, Flexoning® provides "built-in" pliability to seal more cartons faster than ever before. Sterling Supreme is available in a full range of weights, lengths, widths and

colors, plain or printed.

Remember *Trojan Imperial* gummed tape, too. It's a companion product with the kind of quality standards you can always expect from any Trojan tape. Regardless of your choice, you can be *sure* of fresh stock, prompt delivery and top-notch performance.

Ask your paper merchant for your sample rolls of Sterling or Trojan . . . do it today!

# The Gummed Products Company

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# NEW SPICER

# TWO-PLATE CLUTCH LINE DESIGNED FOR HIGH SPEED, HIGH TORQUE ENGINES!

Spicer heavy-duty 13", 14" and 15½" 2-plate clutches have for years been taming high torque loads on the most powerful automotive power plants built. Now this pioneering know-how has been used to develop a complete range of 2-plate clutches from 8½" to 12", in addition to the already established 13", 14", and 15½" units.

The new Spicer 11" 2-plate clutch, now in production, is designed for vehicles with GVW's up to 60,000 pounds, and engines in the torque range from 300-400 pounds/feet.

The new range of Spicer 2-plate clutches will reduce inertia, lower release effort by 40%. Built-in parallelism guarantees uniform pressure across entire surface of pressure plate, regardless of wear or adjustment. Reduced peripheral speeds offer greater resistance to burst.

The new clutches will be smaller, lighter in weight, yet have greater facing area for increased clutching efficiency.

Spicer two-plate clutches are available in damper, rigid or cushion disc design with riveted, bonded or ceramic type facings.

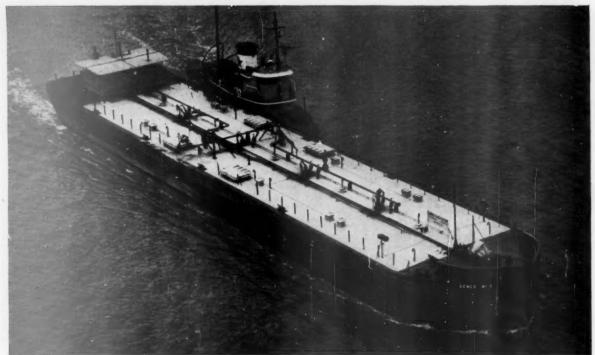


Write today for complete information on the new line of Spicer 2-plate clutches.



SERVING TRANSPORTATION — Transmissions Auxiliaries • Universal Joints • Clutches • Propeller Shafts • Power Take-Offs • Torque Converters Powr-Lok Differentials • Gear Boxes • Forgings Axles • Stampings • Frames • Railway Brives

Many of these products are manufactured in Canada by Hayes Steel Products Limited, Merritton, Ontario



Capacity -2000 tons of sulfuriel The "Genco 7" is the largest in General Chemical's fleet of eight sulfuric acid barges.

# Call on GENERAL CHEMICAL for Sulfuric Acid ... As you need it!

...When you need it!

Whether your sulfuric acid requirements are measured in thousands of tons or carboy lots, General Chemical is best equipped to handle your order.

General's extensive network of production facilities plus its large and flexible transportation system assures you of sulfuric as you need it...when you need it...when

For example, we have eight sulfuric barges serving customers along the Atlantic coast and on inland waterways. Three operate out of Marcus Hook (Philadelphia), Pa. Two in the New York City area, including the 2000-ton capacity "Genco 7" shown above. Three on inland waterways. General also operates the largest fleets of sulfuric tank cars and tank trucks

in the country.

General Chemical has 21 sulfuric plants,\* as well as stock points in key industrial centers across the country. Each is geared to meet regional requirements, offering customers the advantages of "next door" location to General's modern facilities. In addition, the output of one plant backs up that of another, making a coast-to-coast supply line which proves invaluable in meeting emergencies or unexpected demands.

Why not find out how our long experience and extensive facilities can benefit you? For further information, write or phone the nearest General Chemical sales office.

\*In Canada: Allied Chemical Canada, Limited



Large fleets of tank transports provide fast over-the-highway service.



By far the largest fleet of sulfuric tank cars is operated by General Chemical.



General Chemical sulfuric acid is also available in 13-gallon carboys.



GENERAL CHEMICAL DIVISION
40 Regtor Street, New York 6, N. Y.

For More Information Write No. 202 on Place Mark Card-Page 32

# In Purchasing...

I T SEEMS STRANGE that anyone would try it—and incredible that anyone would succeed at it. But racketeers posing as reputable suppliers have been quite successful in victimizing businessmen—including many P.A.'s. When our editors got a tip a couple a weeks ago that sharp operators were at work again in upstate New York they got on the story immediately. Dozens of purchasing agents were questioned over 'phone, hundreds by a mail questionnaire. They told us of various rackets they had encountered. Meanwhile we checked with the Better Business Bureau on what they knew about these shady operators and how to handle them. For a complete rundown on a dangerous situation and what you can do about it see the article on page 72 and the Editorial on page 71.



University purchasing departments don't ordinarily come to mind when you're talking about how big business buys. But at least one university buying organization spends more each year than many of our leading industrial com-

panies. Massachusetts Institute of Technology spends about \$90 million a year on materials and services. How purchasing spends this amount efficiently for 500 different requisitioners is described on page 82.

Do you go along with the theory that suppliers can be a big help in a cost reduction program? Most P.A.'s do, but unfortunately many flounder around trying to find ways to get that help and then trying to solve the problem of how to channel it to the plant people who need it. One large plant has a well-organized program for uncovering and publicizing supplier ideas and new products. With a little imagination the small-company P.A. can install the system in his own department. Get the facts on page 86.



Since value analysis calls for a revolution in people's thinking, it should be no surprise that someone has adapted the oldtime radicals' cry, "Down With the Bosses!" in setting up a value program. In a Philadelphia firm's value

program the slogan is "Keep the Bosses Out.!" (of our committee meetings.) In this case, the bosses cooperate willingly. You'll find out why on page 90.

Even though you may be tempted during these langorous days to close your eyes and think about fishing, boating or swimming, you'd better keep at least one eye on business conditions. Be sure to check our Pulse of Business section on page 7 regularly for a brief, authoritative analysis of economic conditions and a roundup on commodity markets.

Ray Richards
Publisher

JULY 18, 1960



THE IMPORTANT THINGS
YOU NEED TO KNOW
ABOUT

DARNELL CASTERS & WHEELS



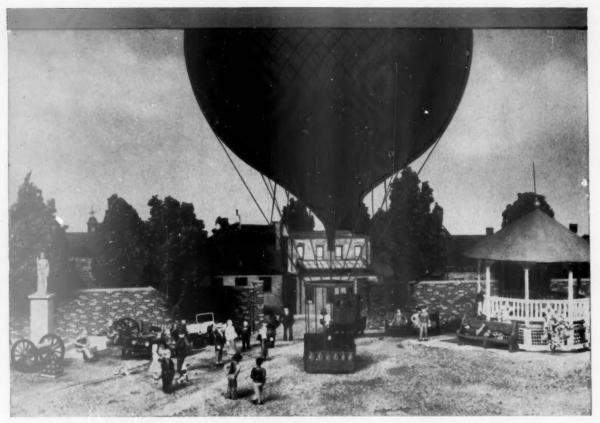
If you want maximum floor protection, economy and efficiency Demand Darnell Dependability... Made to give an extra long life of satisfactory service.....



# DARNELL CORPORATION, LTD.

DOWNEY (Los Angeles County) CALÍF. 37-28 SIXTY-FIRST, WOODSIDE 77, L.I., N.Y. 36 NORTH CLINTON ST., CHICAGO 6, ILL. 1000 PEACHTREE N. E., ATLANTA, GA.

> For More Information Write No. 203 on Place Mark Card—Page 32



# Are you up in the air over tubing sources?

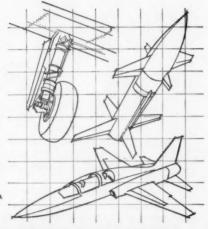
If you have ballooning production problems, consider these important facts. OSTUCO Tubing is always the exact tubing you need for your product because OSTUCO Tubing is CUSTOM MADE for your product. Your order is manufactured to your own specifications to produce steel tubing especially for your application — the precise grade, analysis, size, shape, special anneal and tolerances best suited to your needs.

Ohio Seamless Tube produces both seamless and electric welded steel tubing — is prepared to form many finished or semi-finished tubular parts to your designs.

To get the most from your next steel tubing order, use Custom Made OSTUCO Tubing. Contact your nearest Ohio Seamless representative, or send part drawings to the plant at Shelby, Ohio — Birth-place of the Seamless Steel Tube Industry in America.

Tube Industry in America.

Model illustrated built to 3.5 mm scale.





# **OHIO SEAMLESS TUBE**

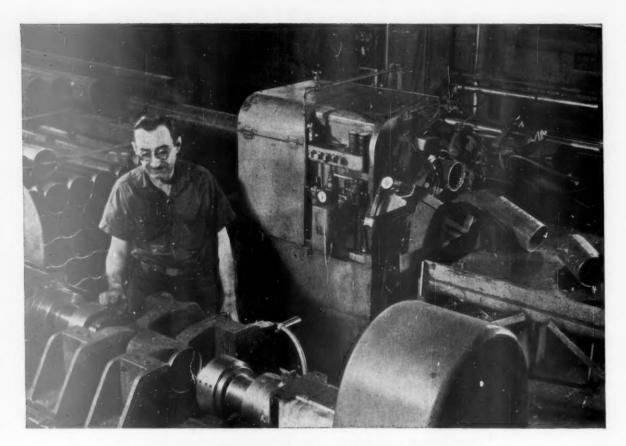
Division of Copperweld Steel Company • SHELBY, OHIO
Seamless and Electric Resistance Welded Steel Tubing • Fabricating and Forging

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CANADA: Railway & Power Engr. Corp., Ltd., a. EXPORT: Corperweld Steel International Company, 225 Broadway, New York 7, New York

- WHO'S GOT THAT MAGAZINE?—Ray Stefanac, Hoskins Mfg., Detroit, has beaten the problem of lost, strayed or stolen trade magazines with a simple system. All magazines come through purchasing, where a routing slip is attached to them. Next to each name on the slip is a box for the reader's initials and the date he released the magazine, and another where he can indicate what articles he wants copies of. There's a time limit on how long one person can hold a magazine—and he hears from purchasing if he keeps it out of circulation too long. When the magazine comes back to purchasing a clerk takes it around to those departments that want copies of articles and lets them run the pages through a copying machine. No more than 6 people are on any route slip, incidentally. If more want to see the magazine, an additional subscription is taken.
- PERMIT FOR SALESMEN?—More and more purchasing departments are using printed permits for salesmen's visits to other departments.

  If nothing else the official looking slip has a good psychological effect by indicating who's the buying authority in the plant.
- WHEN YOU GO ON VACATION—If your company is among the growing number that have plant—wide vacations during the summer, be sure to let suppliers know about it. This will help prevent pointless sales calls and deliveries that can't be accepted. Some companies announce their vacation plans with a form letter to all their suppliers; others attach stickers to all purchase orders and corespondence that leaves the plant 4-6 weeks before vacation time.
- ROUNDTRIP CORRESPONDENCE—To reduce the volume of paperwork in your department, make up a special "roundtrip" form for interoffice memos to engineering, manufacturing, etc. A standard size sheet of stationary (8½" by 11") can be used with a line printed across the center of the page. The top half can be used for the original message; the bottom for the return reply. An arrow or star marked on the bottom half will indicate to your messenger that the memo should be returned to the originator.
- USE SUPPLIER PACKAGING—PA's are missing a chance to save if they don't take a good look at the containers, pallets, etc. that package shipments from suppliers. None should be wasted. Some can be resold to paper dealers. Many can be used in the plant. With imaginative packaging specifications, it is often possible to reuse containers from suppliers for shipments to customers.
- LET VENDORS CODE YOUR INVENTORY—Take a tip from the steel warehouses who identify much of their stock by color. Cartons in the stockroom often look alike and require careful label reading to identify. Ask vendors to seal your shipments with colored tape (you specify the color) or stick a strip across one corner. Any system is quickly learned, and identification—even from a distance—is simple.



# **Tubing for this job** must meet the most rigid specs

This manufacturer of heavy-duty idler rollers has turned to increased automation and tighter material specs to improve production. Note automatic feed and cutoff of tubing in background . . . the quick setup for double-end counterboring at the next station.

Tubing for this job must meet highest standards for uniformity of size, straightness and close tolerance of concentricity. But where do you find large O.D. tubing to meet these rigid specs? At Ryerson, of course-home of the industry's tightest quality controls.

Here you choose from the nation's largest stocks. And you're assured of consistent quality that is so important to meet the demands of automation. The more automated your production line, the less chance for visual inspection, and the more dependent you are on the consistent quality of the raw material.

So when you next need tubing or help with selection and application problems, be "Metalogical"-call Ryerson.

# The type of tubing you need is here

Carbon Steel Tubing—seamless and welded, round and square, cold drawn and hot finished.

Alloy Steel Tubing—seamless rounds.

Fluid Power Tubing-Rockrite cylinder finish, seamless and welded; hydraulic fluid line; seamless and welded cylinder tubing.

Structural Tubing—square, rectangular and round. Ledloy® 170 Tubing-fast machining, 170 sfm.

Stainless Pipe and Tubing—cold drawn seamless and welded. Also welded ornamental.

Aluminum Pipe and Tubing-all commonly used alloys and tempers.

PVC Pipe and Tubing-time-tested Ryertex®-Omicron PVC.





Joseph T. Ryerson & Son, Inc., Member of the INLAND Steel Family



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For More Information Write No. 205 on Place Mark Card-Page 32



# This Is About Crooks

Purchasing Magazine July 18, 1960 It is a sorry tale we have to tell in this issue. Sharpies, con men, and outright crooks posing as legitimate suppliers are busier than ever with schemes to cheat American industry. And thousands of otherwise astute businessmen are being gulled by them. Industry's tribute to racketeering is running into millions of dollars.

The disheartening thing about the whole situation is not that dishonest people are at work. Fast operators we'll have with us always—particularly when times are good. What is galling is that people who should know better are being taken in by the crudest kind of hokey-pokey. We laugh at our country cousin of fifty years ago who bought the Brooklyn Bridge for ten dollars, but is he any stupider than the plant executive of today who falls for some of the dodges described in the following pages?

Purchasing agents can take a certain amount of wry comfort from the fact that most of these crooked deals are put over outside their departments. Gullible executives and naive operating people seem to be the chief victims. Lack of negotiating experience and inability to know when they are legally committing the company make them easy targets for the industrial grifter. The P.A. generally gets into the mess only after the damage has been done.

Lest anyone get too smug, however, he would do well to remember that cheats operate most successfully where purchasing is weak. If operating people are in the habit of talking to prospective vendors and giving out work, doesn't this indicate that purchasing has abdicated some of its responsibility? If top management makes deals with minor suppliers, doesn't this reflect a lack of confidence in the purchasing department? And if a buyer or a P.A. gets taken, isn't there something seriously wrong with the way purchasing personnel are selected and trained?

The resurgence of industrial racketeering is a warning and a challenge to purchasing executives. First, they must be sure their own departments are staffed with the kind of buyers who can recognize a sharp dealer and handle him the way he should be handled. Then they must redouble their efforts to have management establish a firm policy on backdoor selling—and buying. Indeed, the increase in swindling can be used as an argument for centralizing buying authority where it belongs—in the purchasing department. Finally, purchasing executives should do all in their power to publicize the activities of the swindlers, both within their own plants and to other business concerns in their areas.

The best protection against a crooked supplier is a strong, competent and intelligent purchasing department.

Paul V. Farrell

### Buyers Beware—

# The Racket Boys Are Back

Purchasing Magazine has received reports from P.A.'s all over the country which indicate that industrial gyp artists are operating in greater numbers than ever before. Here are the facts on how they operate and how they are able to stay in business.

INDUSTRIAL racketeers—the frauds and swindlers who may be sitting in your waiting room at this very moment—are stepping up their operations throughout the country.

Reports from purchasing agents indicate that these gyp artists are using many of the old tried and true approaches and have also come up with some refinements.

Their operations range from the unethical, or at best, twilight-zone business dealings, to outright swindles. Their success is largely due to the fact that far too many companies allow themselves to be bullied. They are willing to settle with a gyp artist just to get out of a nasty, embarrassing situation. And they won't publicize the fact that they have been taken which makes it easier for the gyp artist to stay in business.

To find out more about the way these swindlers work and how widespread their operations are, Purchasing Magazine made a confidential survey of a large number of P.A.'s. This study was followed up by interviews with a number of purchasing executives whose companies have been on the receiving end of some of these swindles. The findings of the investigation don't make pleasant reading. Here are some of the more important facts:

(A) The total take by industrial gyp artists easily runs into

several million dollars each year.

(B) An indication of how widespread these industrial frauds are is that roughly 20% of the P.A.'s surveyed said they had been approached by shady operators within the last year.

(C) Seventeen percent said they felt the problem of industrial frauds was becoming increasingly serious and reported that the number of gyp artists at work seems to have increased in the last 12 months.

(D) Fifteen percent admitted that their companies had been victimized by industrial racketeers. And this figure may be on the low side since many P.A.'s were undoubtedly reluctant about admitting that their companies had been taken in.

As to the methods used by the gyp artists, the investigation shows:

(1) They usually get into the company through the back door. Whether they first tackle a shop foreman, an engineer, or the company president, they generally make sure not to approach purchasing on the first pass.

(2) They use phony references—often names of corporate directors—hoping the references won't be checked (all too often they aren't).

(3) They have no fixed base of operations. Upon investigation, the offices of these "fly-by-night"

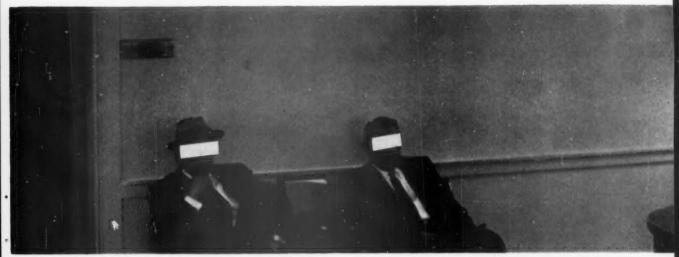
operators often turn out to be garages, vacant lots, cemetaries. They have no manufacturing plants or warehouses. They move from area to area, usually staying only a few months.

(4) Their invoices look phony. Often the company address is typed on the bill rather than printed. Once the gyp artists get paid, it's usually impossible to find them. But after an absence of about three to five years, they often start operating again in the same area.

(5) Of course, the racket boys come in all shapes and sizes. But in describing them, so many P.A.'s used the same adjectives that a stereotype of at least one group of swindlers emerges. Most frequently they are described as being "a little seedy looking, dark complexion, and speak with an accent." They frequently drive late-model high-priced cars. Black Cadillacs seem to be particularly popular. Their license plates are usually from another state-frequently from the Middle Atlantic area. Often the plates are fake.

Right now the favorite swindle is the "secret plating operation." Here's the way this racket works as reported in detail by the P.A. for a large eastern metalworking company:

"The gyp salesman says he has a secret plating and refinishing process for improving the life of



An unusual photo of two gyp artists waiting in the reception room of a large eastern metal fabricating company. Hearing that the gypsters had come back to press payment for a so-called metal refinishing job,

the company's alert purchasing department had a photographer snap their picture under the pretext that the reception room was going to be redesigned. The photo is being used to alert everyone in the company.

tools, wheels, steel rolls, or other items. He refuses to give any details about the process because it's secret. He spiels off some semitechnical gobbledygook and leaves the impression that he can provide a vitally-needed service.

"He asks for a small sample to work on. There won't be any charge. If he gets the test piece, he sends it to a small, legitimate plating shop—since he has no facilities of his own—for a light chrome job. When the piece is returned, the work appears to be more than satisfactory.

"At this point, the gyp salesman asks for the order. When he's queried about price, he is elusive but gives the impression that he can handle the job at a bargain price.

"Generally the salesman puts nothing in writing about his offer. He usually takes whatever he is supposed to work on with him, because he's going back to the plant.

"The salesman returns in a short time with the work. He also has an invoice in hand which he gives to you along with a story about being in a short cash position with a payroll to meet. Sometimes he'll offer a 5% discount for immediate payment. The bill is certain to be a shocker—often ten to fifteen times what you would normally expect it to run.

"Of course, no experienced P.A. would pay an invoice like this on receipt. In most cases he turns the work over to the shop for analysis. It's then that he gets more bad news: the "secret" process is merely a thin coating that does nothing to increase the durability of the part.

"When the salesman comes again for payment-possibly with one or two of his associates-the trouble really begins. He claims that a foreman, shop engineer or someone in purchasing authorized the order and that it must be paid. He threatens to go to the president of the company and sometimes actually will. And, of course, he threatens legal action. Unfortunately, a surprisingly large number of companies let themselves be bullied into making payment just to get out of an unpleasant situation.

While the plating racket is the current favorite, it isn't the only one by any means. Some samples:

(1) The Stationery Racket— This gambit makes full use of a "sob story." The gyp artist is usually European-born and he gives you a long story about his hardships as a refugee before he goes into his sales pitch.

Frequently the gyp artist will claim to be the brother-in-law or uncle of a poor woman whose husband has just passed away

### What Can You Do?

If you ever find yourself involved with industrial "gyp artists", here's what you can do:

(I) Demand that they immediately return any material they may have taken from you.

(2) Advise the "supplier" that an outside expert will examine the items to determine the quality of the work performed. Tell him that payment will be made on the basis of this expert's recommendations.

(3) If the vendor threatens to sue for costs, inform him that you are ready to join in any legal action. They fear litigation or publicity more than you do.

(4) Try to find out if a third party actually did the work. If so, pay this third party his legitimate price providing the work meets your quality specifications.

### Then ....

Spread the word in your plant and your community that racketeers are working in your territory. Be sure to inform your local police department, your local Purchasing Agent Association, the Better Business Bureau and the local Chamber of Commerce.

(the woman frequently needs a serious operation). The widow wants to liquidate her late husband's stationery business and is willing to sell "name brand" merchandise in large quantities at extremely low prices. Sometimes you're even told to "name your own price." However, the deal must be made immediately because of the urgency of the widow's situation.

P.A.'s who have fallen for this line later discover, to their regret, that they have purchased shoddy merchandise of unknown manufacturers which, in the long run, costs more than good quality material. And their regular suppliers are outraged at losing a large order to a "one-shot" operator and are less willing to go all out when hard-to-get items are required.

(2) The Warehouse Racket—This is a gimmick usually practiced by "gypsy" salesmen of MRO supplies—paint, lubricants, or cartons. The gypster says that his company is closing one of its warehouses and is selling all material there at a reduced price. By a strange coincidence, the warehouse is chock full of items that you regularly buy.

Of course, no such warehouse exists. If you issue a purchase order, the material is shipped to you from regular stock. In some instances, the material hasn't even been prepared until your signature is on the dotted line. Once you get it, you find that it is off-brand merchandise, worth considerably less than what you paid for it. One buyer who ordered paint under such an arrangement found that it wouldn't dry and that it washed off quickly.

(3) The Repair Racket—A man calls on you and claims to be the "authorized repair service" in the area for the manufacturer of your office equipment.

If he can get a foot in the door, his next move is to take equipment out of your plant for repairs—repairs that usually aren't needed. Frequently the repair

> Gyp artists have been so prevalent in the Syracuse area that the local purchasing agents association had to send out a flash warning to its members to put them on guard.

### How the Gyp Artists Work

Here's a letter recently received by Purchasing Magazine which outlines one of the typical methods used by industrial swindlers. It's from the purchasing agent for a large midwestern metalworking company:

"Contact with the company is normally made by telephone to the maintenance department or some other department in the shop, with the intent of doing repairs to tools, jigs, fixtures, or refinishing of metal parts. In our case, the contact was made through our metallurgical department and the contact stated that he could have a still that is used in our laboratory refinished for a cost of approximately \$50.

"Unfortunately, without the purchasing department's knowledge, the still was removed from our plant and the contact proceeded to do this so-called elaborate cleaning and refinishing. On returning this still, the bill submitted was approximately \$165 in-

stead of the \$50 originally discussed.

"I did some checking with local sources and found the person that actually did the work on the still, and determined that the total cost involved was approximately \$25. Normally, these "gypsies" submit their bill when they deliver the material and want cash payment. Legally, I have been advised that you have no alternative regardless of how the purchasing department feels, as far as authorized agents are concerned, but to pay the bill."

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SYRACUSE 2, N. Y.
May 26, 1960 PNONE HA 2-2627

PLASE: FLASE: FLASE: FLASE:

"Gyp Artists" are in this area. Phonies that will take you for plenty unless you and your people are on the alert.

They come into your plant and some way, somehow, get to talk with your plant foreman, master mechanic, or someone in authority. Then they go to work. They'll promise your man anything. Payment? Forget it. "We just want to share with you our knowledge, our shilty to refinish, resurface parts subject to wear to get sawy from the enormous expenses you are now subjected". They'll tell you the cost will be nominal - a fraction of the original purchase cost, etc., etc.

If your people break down and give these leeches any of your equipment the sample part will be returned to you and its appearance will seem to bear out all of their promises. The shopman gets all excited and gives them a sireable amount of equipment to be resurfaced, etc. Then the roof caves in - an invoice comes in that looks like the national debt - payment is asked for immediately - it's then demanded - and all the while they are going higher and higher in your organization, embarrassing, threatening, accusing.

You may think we're laying it on a bit thick - on the contrary. In this letter all we can do is hit the high spots. And, fellows, you know you have been victimized.

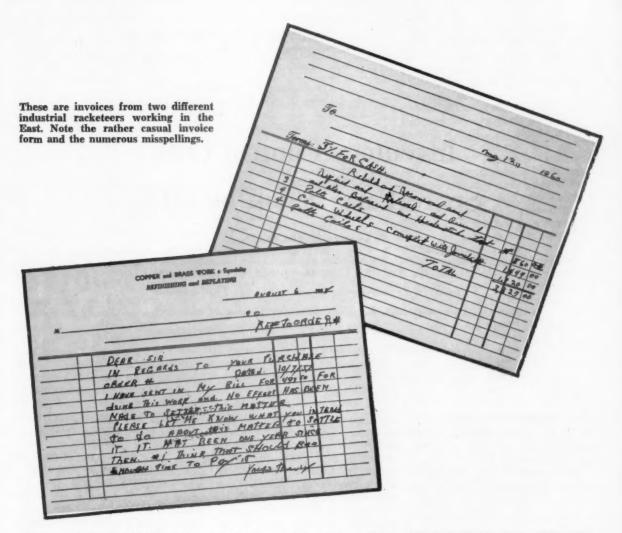
So this warning. You all have your procedures for callers and for authorizing work to be done. It might be well to review them to see if the above could happen to your campany. Don't let any material go out unless you know the story. Don't do business with any of these "smoothies" or with concerns you cannot get a rating on until you investigate thoroly.

Caveat Emptor!

G.).

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work consists of a quick cleaning job, but the bill is one-and-ahalf to two times higher than reputable repair outfits charge for necessary work.

(4) The Pencil Racket—This trick us usually tried on companies with commonly used words like "Universal", "American", or "National" in their name. A salesman of pencils (or perhaps advertising specialties like blotters and calendars) calls and says that by mistake he has printed your company's name on a thousand pencils due to confusion with another company with a similar name. He offers you a special deal to help him "get rid of" the pencils.

Of course, the pencils aren't really made up until after you've signed the order. And when they arrive they are certain to be the poorest grade—not worth any-

thing near what you paid for them.

(5) The Error Racket—This is a variation of the pencil racket. The gyp salesman sheepishly informs you that his company made a "manufacturing mistake." It seems that in working on an order the company made too much of a certain item. Now they are stuck with it. He'll let you have it at a 10% discount.

Of course, the story is pure fiction and what you end up buying at a 10% discount proves to be one of your most expensive purchases.

(6) The Low Bid Racket—The gyp artist will bid on a maintenance contract and submit a quote that may be as much as \$1000 or \$2000 lower than the closest competitor. He gets the contract.

However, about halfway through the job the trouble starts. "There are extenuating circumstances" or "labor and material costs have just risen." They won't finish the job unless you pay more. If you refuse, the work stops; you have to go to a lot of trouble and expense to get it finished and possibly fight a case in court. If you agree to pay, the job ends up costing much more than any reputable company would have charged in the first place.

If your company has never been approached by anyone plying these or similar rackets, you've been lucky. But don't assume it can't happen to you or your buyers. Keep on the alert, deal only with reputable suppliers, make use of Dun & Bradstreet ratings. And if you get involved, don't allow yourself to be bullied or embarrassed into paying off the gyp artist—that's how they stay in business.

# Inventory Control Cuts Spare Parts Stock by 20%

By Leonard Sloane, News Editor

Atlantic Refining Company found its repair parts inventories were getting out of hand. The solution was a system that eliminates duplication of identical parts that carried different numbers and descriptions. Here's how it was done.

AN INVENTORY control system at the Atlantic Refining Company has cut the stock of spare parts required by 20%.

The system covers the whole materials management cycle. Selection of parts to be bought, warehoused, and issued to the operating departments is made swiftly and automatically with electronic data processing technique. In addition, duplication and excessive inventories have been eliminated.

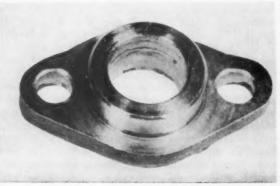
Purchasing at Atlantic buys all materials, supplies, and equipment except crude oil and petroleum products. Spare parts are a major buying responsibility, because of the many large pieces of equipment at the refineries.

The need for integrated inventory control at Atlantic's Philadelphia refinery became acute two years ago when the number of repair parts required for machinery and equipment reached a peak. Of the 35,000 items held by the stores division, 12,000 were

Editor's Note: James S. Parks, who was Atlantic's director of purchases when this article was written, has recently retired.



Figure 1—These glands are identical, but each was given a different description and parts number by the manufacturer. Atlantic's inventory control system eliminates these duplications; identical parts now get the same part number.



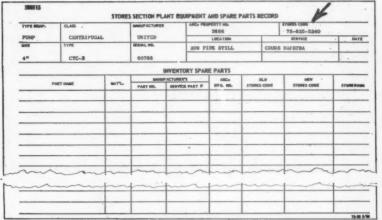


Figure 2—This equipment record lists all the spare parts for each piece of equipment by the manufacturer's part number and Atlantic's code number.

in the repair parts category, notes Director of Purchases James S. Parks.

"Many of these parts were duplications," he says, "but we didn't know it. Manufacturers might use the same parts on different models of pumps, for example, but give them different names or numbers. Therefore we could have as many as six stock cards and six bins for the same basic part."

Thus the company found that was carrying unnecessary stocks of duplicated items-which were subject to deterioration, obsolescence, and surplus. Take the case of a manufacturer who brought out two different models of a pump in successive years.

In one year, a certain part for the pump was called a sleeve and numbered part 72. In the next, the same part was called a ring and numbered part 86. Atlantic was forced to buy and carry both parts separately on stock cards and in storage bins (figure 1).

To get rid of this waste, purchasing had to develop new methods and techniques of control. Its success is measured by the fact that when the inventory control system was adopted, spare parts requirements were cut down to

Here's what happened: IBM stock cards were made up for all

the repair parts at the refinery. Descriptions of each part were listed as provided by the manu-

facturer.

10,000 parts.

Also, a new code number was assigned to each part. This code system classifies all repair parts with only nine digits. The first two numbers identify the general commodity class, such as "pumps". Within each commodity class are 1000 subdivisions identified by the next three digits. These digits identify materials of like nature, shape, composition, or manufacturer. The final four digits-with 10,000 subdivisions -are for differentiating characteristics, such as dimensions, types, sizes, and specifications.

For instance, take the code number 79-825-7400. The first two numbers signify that the commodity grouping is "pump repair parts, centrifugal." The next thre numbers indicate that the name of manufacturer is United Centrifugal Pumps. And the final four numbers clearly identify the

specific part as a

shaft, 4140 STL, PT. 2, Stock No. 3A-2043 for 11/2 ES-B, Pump, Centrifugal, Serial No. 63958

By using these flexible code numbers. Atlantic can make effective use of its electronic computing and tabulating facilities. For once every item has a descriptive number, it can be identified easily in computations by the machines.

Next step was to make a complete survey of all the repair parts at the refinery. With 3800 pumps, compressors, turbines, fans, blowers, and other large equipment in operation, the survey involved a careful breaking down of each item to determine exactly which parts were in each machine.

### **Cooperate With Manufacturers**

As part of this survey, a form, called the "stores section plant equipment and spare parts record," was developed (figure 2). A separate record was made for each major piece of equipment with room for listing all the inventory spare parts.

To get its records in good shape,

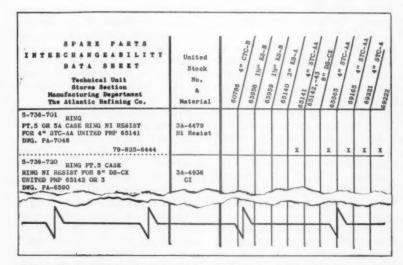


Figure 3-A tally sheet was sent to all major suppliers with the request that they indicate which parts are used in each piece of equipment. This made it easy to discover cases where the same part was used on two or more machines.

Figure 4—Whenever two parts are identified as being the same from the interchangeability number in the upper right hand corner, one of the cards is cancelled and the two corresponding storage bins are combined.

Atlantic naturally had to get the cooperation of the equipment manufacturers. It had to know if it had the complete listing of all the repair parts on equipment and their interchangeability with other models of similar machines.

So another form was made upcalled the "spare parts interchangeability data sheet" (figure 3). This is a tally sheet made up for each manufacturer of equipment

All equipment made by this manufacturer is listed along the top of the sheet. On the side are complete descriptions of the spare parts for these machines that were kept in stock. The sheets were limited to 50 columns in width and 400 spare parts in length.

Most of the major suppliers were contacted before the tally sheets were made up to determine the most convenient order of listing both parts and equipment. Then the sheets were sent out to the individual equipment manufacturers for them to complete.

The first verticle column of the tally sheet was left blank for the manufacturer to fill in his stock number and, if necessary, the type of material of each part. He also was asked to check the appropriate columns to indicate in which equipment the specific parts are used.

### **Tie-in Numbers**

The manufacturer's stock number then became the interchangeability number. Once the tally sheets were returned to Atlantic, this interchangeability number was typed in the upper right hand corner of each IBM card for spare parts. It then was an easy matter to see whether two, three, or more cards had the same interchangeability number. If so, the cards were cancelled (figure 4), the parts were placed

5-738-500 SHAFT
PT.2 SHAFT FOR SIZE
1 1/2 ES-B UNITED CENT. PMP
SERIAL 63958



in one unified bin, and maximum and minimum quantities were adjusted.

As a result of this system, there are now two numbers on each stock card. One is Atlantic's own code number to describe the part (5-738-500). The other is the manufacturer's stock number—the interchangeability number—to identify the part wherever it is used (3A-2043).

To tie the whole program together, a stores stock catalog was published. Distributed throughout the company, it describes each part and contains a listing of the numerical designations.

Purchasing's primary role in getting the new system developed was working with the equipment manufacturers to obtain their cooperation. Parks and his staff undertook a major public relations job, saying, in effect, to the suppliers.

"Look, we want to reduce our spare parts inventory and there's just one way to do it. We'd like you to cooperate with us on getting uniform numbers for parts on the various models of your equipment." In addition to working with suppliers, the purchasing department had to obtain the close cooperation of other departments in the company to make the inventory control system work. Stores, manufacturing, methods, and standards personnel all played a part in setting up the system and putting it into operation.

The advantages of this inventory control system, as seen by Atlantic. are:

(1) In addition to the 20% reduction in the number of spare parts, a cut in the dollar value of inventories by over 30%.

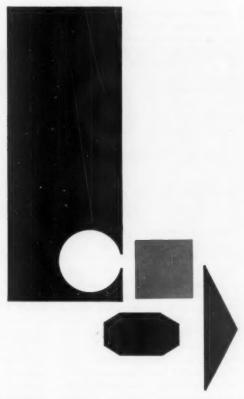
(2) A large savings in bin space required to store the parts.

(3) A savings in paperwork and clerical effort that had been necessary to keep the extra stock cards up-to-date.

Atlantic spends about \$65 million for goods and services bought each year, so its inventory control system is extremely important. When completed this year—at a cost in clerical manpower of a couple of hundred thousand dollars—the system is expected to make a substantial contribution to profits.

# What's New In Packaging?

By Dr. John S. Barton



PACKAGING has now become the nation's sixth largest industry. As a result of consumer demands and the offering of new developments of applied research, the packaging business amounted to over \$10 billion in 1959.

More than ever before, the package was "the second product" being produced for and sold by virtually every firm engaged in the manufacture and processing of products for retail distribution. In many cases, the package represented a greater dollar value than its contents.

### **Executive Responsibility**

The users of packaging materials were placing this area of responsibility to an increasing degree in the hands of their top executives. Packaging research, development, and engineering has become one of the newest professions, with college level and graduate school courses devoted to training personnel for this field. In the words of the Folding Paper Box Association of America, this is not the atomic age or the space age, but "The Packaging Era". Each family in our land uses and disposes of 2000 folding paper boxes per year, in addition to an avalanche of containers from tin, glass, wood, cellophane, plastics, etc.

The production and usage of packaging materials has become a major factor in our national economy. The total quantity of containers and packaging materials produced during the 1950's increased at about the same rate as the real growth of the national economy as measured by the gross national product—slightly more than 3% per year.

However, during the decade of the 1950's, a wide divergence in the growth rate occurred between individual container industries and between components. While metal containers showed very little growth, major gains occurred in paper bags, corrugated shipping containers, frozen food cartons, and paper milk containers (which alone had an average gain of about 14% per year in the 1950 to 1959 period).

The major growth impetus was in consumer-type containers, which increased 43% during this period, whereas shipping containers increased only 17%. And the particular area with the most

dynamic growth has been films for packaging.

Some very energetic competitive battles have arisen between packaging materials. These are sure to grow both in number and in intensity.

### **Increased Competition**

For example, conflicts are shaping up between polyethylene bottles and metal cans for detergents; flexible foil laminants and metal cans for dehydrated foods; polyethylene overwraps and cellophane and waxed paper overwraps for various commodities; and cartoned pouch packs and glass jars for baby foods. Package-to-package competition is just as severe as the brand-to-brand and product-to-product contest. There are more than 150,000 active brand names nationally advertised today, (about 10 times the number of words in the average person's vocabulary), which are jostling for position on the shelves by every attention-getting

Dr. Barton is director of packaging research at the Western Waxide Div., Crown Zellerbach Corp., San Leandro, Calif. This article is based on a talk he gave at the recent National Association of Purchasing Agents convention in Los Angeles. stratagem-including packaging.

Packaging shifts between materials are influenced by developments in materials, package constructions, methods, and machines. The various factors in these developments have not always been in phase, so that growth has been spasmodic.

For instance, the rapid development of new and improved materials of construction during 1957 and 1958 found certain types of packaging in the position of being "all dressed up with no place to go". Polyethylene and other soft films were ready to challenge several standard wrapping materials (such as cellophane) in economy and performance, but wrapping machinery to handle them was not ready.

However, the recent emergence of polyethylene-wrapped bread indicates that wrapping machinery has been developed to solve one of the flexible packaging's most serious deadlocks. This development has stimulated progress in allied fields to such an extent that widespread use of polyolefin films for overwrapping is rapidly accelerating.

### Packaging Can Help

Probably the most basic and most interesting reason for the meteoric growth of packaging has been the realization of the impact that a package change can have on the course of a business. Many "rags to riches" stories can be cited of how a new packaging or concept completely changed the course of a business or lifted it from obscurity to national prominence. Perhaps the outstanding example of this phenomenon was the smashing success of the Marlboro flip-top cigarette box. Packaging people speak with awe of this marketing bulls-eye, which increased the sales volume of Marlboros 5000% in eight months.

Let's examine briefly some of the significant technical developments that have had an impact on the businesses concerned with particular packaging systems.

#### Changing the Package

The first concerns the idea that foods previously requiring vacuum protection in metal or glass



Photo courtesy Modern Packaging Encyclopedia

The break-apart package is becoming increasingly popular for certain types of products. It speeds order filling, and it eliminates repacking cost for distributors.

could just as well be packaged in vacuumized, heat-sealed, flexible barrier materials. This development was originally aimed at ground coffee, and was the genesis of what we now know as flexible vacuum packaging. Today this field uses an estimated \$20 million worth of laminated films per year.

In the original experiments, attempts were made to form ground coffee into bricks, and heat-seal them in a laminated tissue-wax-foil-paper material while under high vacuum—thereby leaving the contents devoid of oxygen. In the early 1940's, a prototype machine was built, but it was a gigantic failure because coffee was pulled by the vacuum into the seal area, resulting in leaks.

However, with a newly designed machine, a different material, and a different food product, success arrived. This was a lamination of cellophane and pliofilm for bacon, which hit the market early in 1947 as the first flexible package to carry the legend "vacuum packed." From bacon, the idea spread quickly to sliced luncheon meats and cheese, both of which gained longer shelf-life through the exclusion of oxygen from the package.

At the same time a process evolved where nitrogen gas was introduced into the package after the air was withdrawn. This type of packaging spread to encompass nut meats, active yeast, and dozens of other unstable products which required an inert gas atmosphere. The full ramifications of this development are still unknown.

#### Uses Mechanical Pressure

Another example is the concept of "thermoforming" plastic sheet material to form a "blister" or "skin" which encloses a product. A simple merchandising card is attached.

The skin or blister pack appeared as a sudden new discovery around 1952. The early forms of this type of package were prepared by a mechanical pressure or positive die forming and not by vacuum. The use of vacuum first became important in the production of three-dimensional maps developed by the Army Map Service and the Coast and Geodetic Survey.

The next step was the suggestion that the kind of equipment used to form the maps could be used to form packages and container components. This was first used commercially in 1952 by the Shaw Randall Company, an acetate box maker. Others quickly followed, including Kraft Foods for individual portion packaging of jelly and the U. S. Rubber Company for an all-plastic blister

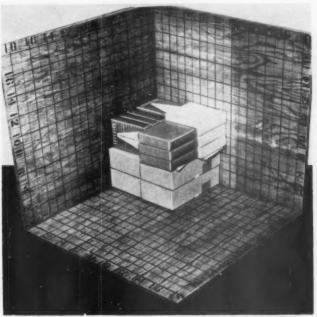


Photo courtesy of Modern Packaging

Here's a novel idea: a size guide for selecting the right container for odd lots of packages. When the packages are stacked in the corner of the guide unit, you can tell at a glance what size container is needed to hold them. The container guide was developed by the Naval Supply Depot, Mechanicsburg, Pa.



Photo courtesy Modern Packaging Encyclopedia

To reduce weight for air shipments of large magnetron tubes, two molded polystyrene blocks (white) are used along with two pads of rubberized fiber. Compared with the packaging methods formerly used, the new method has reduced weight 67% and lowered packaging cost 58%.

sphere for golf balls.

Since then, there has been an ever-widening series of material developments involving butyrate, polystyrene, vinyl, polyethylene, polyester, oriented polystyrene, polypropylene, and laminations. Automatic machinery has now been developed to the point where speeds of 1,000 packages per minute are common. Forming, filling, and sealing in a continuous integrated operation is today a practical reality. Last year, thermoformed plastic packaging consumed an estimated 15 million lbs. of plastic sheet and film.

A relatively recent package application for more specialized uses is the water-soluble pouch. This is aimed at product fields where it is advantageous to add a pre-measured amount of a dry ingredient to water without having to open the package and without the need to touch its contents.

A water-soluble polyvinyl alcohol film, which can be heatsealed automatically at economical speeds, has made its debut in unit-of-use packaging for a household laundry detergent. This product is being sold in dispenser cartons containing 12 of the individual two-ounce pouches. The unit package contains the correct amount of detergent needed to do an average washing machine load of laundry and dissolves completely within one minute in hot water.

### **Excellent Consumer Acceptance**

Early sales reports indicate excellent consumer acceptance. Its use is sure to expand to such materials as insecticides for making up spray solutions, household bleaches and dyes, etc. Other types of soluble films based on methyl cellulose and starch are under development. It is certainly not out of reason to anticipate the availability of transparent edible films for specialized food packaging.

An example of an old idea whose usefulness has greatly expanded with the availability of modern packaging materials is "strip-packaging" — packaging single pre-measured portions into compartmented strips or packets. This method began in 1917 when American Seed Co. started packaging strips of seed in a glued paper fold. This strip would be

planted and the paper would disintegrate. An ingenious machine was designed to make and fill the strips automatically.

All went fine until shipments of the special porous adhesive-backed paper from Japan were cut off by the first World War. Faced with the death of this initial success, the engineer who designed the machine related the sad story to his dentist who suggested packaging pills. Thereupon a fresh start was made and the Ivers-Lee Company was formed, which began to strippackage pills in waxed paper in November, 1919.

With the development of moistureproof heat-sealing cellophanes during the 1920's, strip-packaging really became of age—since this proved to be an ideal material for both foods and pharmaceuticals. New machines were developed by Ivers-Lee for handling cellophane. As the business grew, the protective requirements for different products led to the search for new film combinations and coatings, incorporating foil and plastic films which could be tailored to specific needs. In

(Please turn to page 224)

# 500 Requisitioners

In a new twist on centralized buying,
Massachusetts Institute of Technology
set up a "council" purchasing organization to meet
the Institute's extremely varied
procurement requirements.

By John Van de Water, Technical Editor

ARGE EDUCATIONAL institutions require the same big time buying approach as big businesses. The Massachusetts Institute of Technology is a case in point. It spends about \$90 million on purchased materials and services for more than 500 requisitioners. Millions of dollars are spent for a fantastic diversity of materials to keep M. I. T.'s educational and research facilities operating at peak efficiency. For example, M. I. T.'s famed Lincoln Laboratory has a budget of over \$30 million to itself and much of it goes for the complex equipment and exotic materials needed to push forward

the frontiers of electronic science.

The purchasing job is a tough one. M. I. T. has 22 academic departments, hundreds of research projects and a half-dozen major laboratories. Each must be served by purchasing. Yet no one purchasing group could hope to learn enough about the individual requirements of all of these activities.

### **Need Buying Flexibility**

Several years ago, when M.I.T. decided to try to pull together its somewhat casual, sprawling purchasing activities, it faced a difficult problem: how to centralize

purchasing and still have enough buying flexibility to meet the Institute's extremely varied procurement needs.

"Completely centralized purchasing at M.I.T. would be altogether hopeless," was the verdict of a committee organized to study the problem. The solution the group eventually reached was to set up independent purchasing agencies organized into a purchasing council.

At present there are 10 independent purchasing agencies at M.I.T. The general purchasing department, headed by Director of Purchases G. Edward Nealand,



M.I.T. Director of Purchases G. Edward Nealand: "A purchasing department must be as close to the center of activity as possible."



The general purchasing department also supervises laboratory supplies—including over 2000 student accounts. This scene is in one of the many laboratory storerooms.

buys for all administrative and academic departments and for more than 400 small research projects. In addition, it maintains stocks of standard supplies used by all departments.

The major laboratories have their own purchasing departments. At the larger ones, such as the Lincoln Laboratory, which employs over 1500 people, the purchasing agent is assisted by several buyers. In the smaller labs, such as the Naval Supersonic Windtunnel or the Laboratory for Nuclear Science, purchasing is a one-man operation.

### Set Uniform Procedures

Major service groups also have their own purchasing agencies. The office of physical plant, for instance, is responsible for maintenance and operating supplies for buildings and equipment. The photographic service buys materials for its own use. In general, the purchasing agencies buy the specialized items needed by their units and get standard materials from the central stores maintained by the general purchasing department.

The purchasing council, on which all the agencies are represented, coordinates M.I.T.'s widespread purchasing activities. The council meets only as necessary—to discuss purchasing problems and to exchange information. Between meetings routine matters

are handled by a four-man steering committee headed by Director of Purchases Nealand.

One of the council's main functions is to set standards for commonly used items. It also establishes uniform purchasing procedures.

To make the most of its volume-buying potential, the council works out contracts for purchases of materials or equipment used by most of the agencies. In such cases the purchasing agent most concerned with the item negotiates the purchase with the vendor. For example, the general purchasing department makes contracts for electric lamps, compressed gases, and office machine maintenance; fuel oil contracts for all buildings are negotiated by the physical plant purchasing groups.

Although the general purchasing department is closely concerned with many of M.I.T.'s purchasing activities, it has no line of responsibility over the other agencies. The individual buying groups are responsible to the directors of the laboratories or service groups of which they are a part. Even the decisions made by the council are not binding on the purchasing agencies. This is seldom a problem, however, since the council's decisions are mutually arrived at.

Each buying agency has full authority for vendor selection, price acceptance, etc. However, all the buying groups naturally take advantage of any sources, prices or terms resulting from contracts negotiated by other purchasing agencies.

### It's Specialized Buying

Behind the agency idea is the recognition that laboratories have specialized needs and that an effective buyer must know these needs and be able to handle them skillfully. That's why M.I.T. buyers have to be on the spot. And that's why they are given authority to buy on their own without having to go back to a central office for approval.

As Nealand says: "I feel strongly that a purchasing department should be as close to the center of activity as possible. This is especially so in research. Scientists and engineers must be able to discuss their needs with purchasing. The very existence of the purchasing department depends on how well it takes care of these needs."

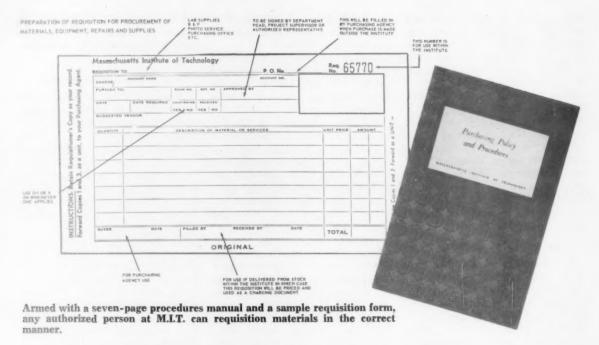
Of the 60,000 purchase orders placed annually by all the M.I.T. purchasing agencies, general pur-



C. Edward Slye, manager of the office of laboratory supplies, buys all chemicals and lab supplies for M.I.T.



Nealand discusses stationary inventory with Arthur B. White, assistant supplies manager. White is responsible for all office supplies.



chasing is responsible for more than 30,000. Requisitions come in from over 500 requisitioners in administrative, academic, and research activities. In addition, general purchasing supervises the laboratory supplies office which handles the purchasing, inventory and distribution of all standard supplies. The group services faculty and research staffs, as well as over 2000 student accounts. Turnover of its stocks exceeds \$500,000 annually.

"Central stores is one of our strong points," says Nealand, "since it makes it possible for the different purchasing agencies to concentrate on their own special needs. They draw their standard items from our stock."

### He Knows Users Needs

Laboratory supplies, chemicals, stationery, and office supplies are stocked in strategic locations throughout the Institute. "We do not keep metals and electronic parts in inventory," explains Nealand, "because these items are carried by a number of local suppliers. Also, these materials are easier to get than lab supplies and chemicals."

As an M.I.T. chemistry graduate, Nealand appreciates the needs of a researcher. "If a researcher

needs a chemical, it ought to be here so he can go on with the job while he's still enthusiastic. Ideas get lost if you can't work on them right away. The research job is more important than fast turnover. That's why we stock over 5000 different chemicals, even if it does mean carrying a few that are seldom used."

Besides Nealand, the general purchasing department includes three buyers who purchase research materials, dormitory supplies, furniture, services, and printing. The supply managers also function as buyers. C. Edward Slye, manager of the office of laboratory supplies, buys chemicals and lab supplies. Arthur B. White, assistant manager, buys stationery and office supplies.

In an effort to simplify both requisitioning and ordering, Nealand is cataloging his inventory by commodity groups. Once this is done, he will issue printed catalogs to all requisitioners. He plans separate listings of glassware, lab supplies, chemicals and stationery.

The lists will help standardize item descriptions and will also let requisitioners know what is normally carried in stock. But Nealand sees still another use for the lists. He plans to have a large quantity of extra sheets printed—

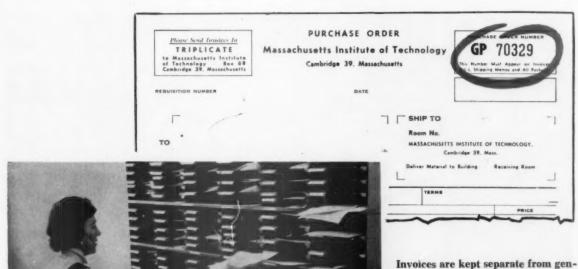
with space for quantity and price listings opposite each item—so that they can be used as attachments to requisitions, purchase orders or quote requests.

### Stress Simplicity

With the quantity filled in, the lists can be used as stock requisitions. Or they can be attached to purchase orders as item lists. For quotations, an extra copy will be sent to the vendor who can fill in the price information and return it as his quote. In each case, a great deal of time-consuming typing is eliminated.

This desire for simplification is typical of purchasing. At present, any authorized person at M.I.T. can prepare a requisition merely by referring to the seven-page policy and procedure manual and the sample requisition form supplied by general purchasing. Whether the requisitioner is a faculty professor who works through the general purchasing department, a research scientist who goes through a laboratory purchasing agency or a maintenance man who puts his order through the physical plant buying office, the procedure and the forms he uses are the same.

The attractive policy booklet clearly describes the purchasing



eral mail since they are sent to a special post office box. A clerk familiar with purchasing routine distributes the invoices to the group that issued the p.o. Prefix p.o. numbers indicate which group placed the order.

function and its relation to other departments. It puts the purchasing job in the right perspective:

"Purchasing Agencies are created to assist other Institute departments and laboratories in procuring their needs with the most intelligent selection and at the most advantageous price. They are to provide counsel and advice as well as to handle the mechanics of procurement expeditiously."

Purchasing's stand on backdoor buying is clearly stated:

"Purchasing policy does not preclude any individual from contacting sources of supply for preliminary information concerning price, quality, or use of anything in which he is interested. In fact, the Purchasing Agencies will supply the names of vendors of commodities upon request. However, such preliminary contacts are not to produce commitments, for this is the function of the Purchasing Agency."

#### Two-in-One Requisition

The manual then goes on to describe requisitioning, ordering, receiving, and invoice procedures. It says:

"You should feel free to consult with the Purchasing Agency before preparing a requisition." But to avoid a flood of routine questions, Nealand has given each potential requisitioner a sample requisition form which shows how it should be made out.

M.I.T.'s requisition form may be used either as a purchase requisition or as a stock requisition. Space is provided for price information so that if the form is used as a stock requisition it can be priced by the stock clerks and used as a charging document.

Another advantage of the twoin-one requisition is this: If the requisition is sent to a purchasing agency when the material should have been ordered from central stores, the buyer simply routes it to the right department. It's not necessary to return it to the requisitioner to have another form made out. This saves everybody's time.

M.I.T. has also eliminated paperwork in receiving operations. Frequently, purchased goods are delivered directly to the using department. In this case no receiving report is prepared. But when material is delivered to receiving, a receiving clerk makes out a simple receipt in two copies. He keeps one and sends the other to the user to notify him that the material has arrived. The receiving department doesn't open the package; it prepares the receipt

from the bill of lading or the delivery ticket.

Then it is up to the user to decide whether the delivered material is acceptable. If it is, he notes his acceptance on the vendor's invoice.

Invoices are sent to the purchasing agency which originated the order. If the price on the invoice is correct, it is stamped approved. Then it is routed to the user who certifies that the material was received in good condition and in the right quantity. He inserts the receipt date, notes whether order is complete or partial, and signs it. Finally, the approved invoice goes to accounting for checking and payment.

To speed up invoice handling, the general purchasing department uses a special post office box number which is for invoices only. (Cost of the post office box is only \$24 a year.) A note at the top of the purchase order tells the vendor where to mail his invoice. When invoices come in a clerk sorts them and routes them to the purchasing agencies. Prefixes to the order numbers tell the clerk who issued the P.O. This system makes it certain that invoices will not be delayed in the large quantity of general mail received by the Institute. - END



Pegboard displays of suppliers' new products are hung in a special room for one month. Visitors from engineering, manufacturing and maintenance can study exhibits, pick up literature, and request additional information.

# Cut Costs With Vendors' Ideas

EVERYONE'S AGREED that suppliers' ideas are vital in any cost reduction program. It's often difficult, however, to get them out of suppliers and across to operating people.

The problem is particularly acute in a large and complex manufacturing organization. You may have thousands of vendors and hundreds of engineers. Trying to get an exchange of thoughts between them calls for good administration and communication.

Dave Riggs, manager of purchasing and traffic at Westinghouse's East Pittsburgh division, has succeeded in doing it with a New Products Section in purchasing. Suppliers are encouraged to submit new ideas or new products they think someone in Westinghouse will be interested in. Each product submitted is exhibited for at least a month in a special room set up for the purpose. East Pittsburgh engineering,

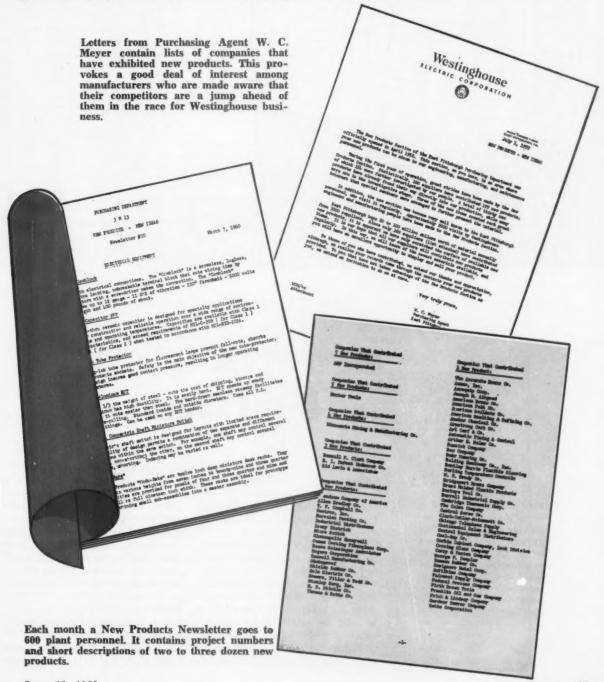
manufacturing and maintenance personnel are invited to examine the displays, then they notify purchasing when they want more information.

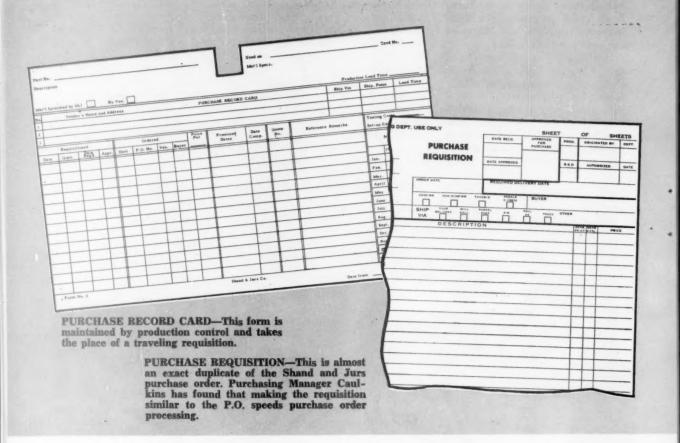
The basic idea is simple enough, but Westinghouse has given it a few new twists: The program is not a one-shot seminar deal but a continuing effort. If an engineer. shows a special interest in a product, purchasing will arrange a seminar on it. But the displays continue day after day throughout the year. Similarly, suppliers are not asked once to exhibit, then forgotten. They are regularly reminded-by letters, posters and personnel requests from buyersthat Westinghouse wants to know about new items and that it will be to their advantage to have their products on display. (In 22 months, from the start of the program, 400 products had been displayed. Plant personnel has made over 3000 visits to the New Products Section. Eighty of the items have found their way into Westinghouse products, and 295 more are under investigation.)

Selling the program doesn't end on the suppliers' side of the fence. Purchasing keeps interest among operating people high with a monthly New Products Newsletter. The newsletter contains precise descriptions of products to be exhibited in the month ahead and goes to 600 people in the plant.

Each description bears the same project number that appears on the product to be displayed, so that exhibits can be located and identified easily. Visitors are urged to make use of the folders stacked near each exhibit. They contain a supply of supplier bulletins and price sheets, and also serve as collecting points for requests for more information.

Riggs is convinced that the New Products Section is paying off for all concerned. Westinghouse is getting closer to one of its basic objectives—to draw as much as possible on the technical knowledge and experience of its suppliers. Purchasing is broadening its service to engineering and manufacturing and working more closely with them than ever before. And suppliers are beginning to realize that more help for Westinghouse means more sales to them.







This article is one of a series illustrating and explaining the use of various purchasing department forms. All forms that will be described in this series have been selected from representative purchasing organizations around the country.

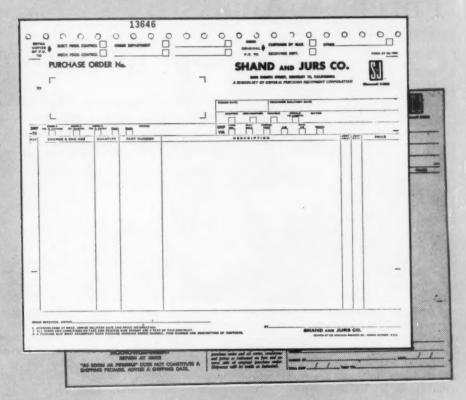
SPECIAL ATTENTION to form design has paid off handsomely for Shand and Jurs Co. of Berkeley, Calif., subsidiary of General Precision Equipment Corp. In making up his forms, J. T. Caulkins, purchasing department manager, has stressed easy reading and quick "in-line" typing.

One of the signal features of Shand and Jurs purchasing paperwork is that no formal requisition is used for production parts. Instead, the production control department maintains a form which is a combination traveling requisition and purchase record card.

When factory stocks reach a pre-determined minimum, a requirement entry is made in production control and the "requisition" card is sent to purchasing. The buyer issues whatever purchase orders are necessary to fill plant requirements, enters the order number and supplier's name on the card and returns it to production control.

For purchases of miscellaneous materials—those not controlled under item part numbers—the requisition that is used is almost

PURCHASE ORDER—Features explicit instructions to the supplier on when, where and how the shipment should be delivered. The acknowledgment copy states that "as soon as possible" is not regarded as a shipping date.



PURCHASE ORDER CHANGE
—This form is unique in that it
is printed after interleave carbon has been inserted. The three
copies, which are used internally, are "printed" by the carbons.

a duplicate of the purchase order. The design of this form makes it possible for the buyer to process the order quickly.

Shand and Jurs purchasing came up with another novel idea in the design of its four-part purchase order change form. Before this form is printed, carbons are inserted among the four sheets. When the form is put through the printing press, only the top form is actually printed; the other three copies are made by the carbons as the form goes through the press.

PRCHASE ORDER NO		DATE
1	PART NO.	DESCRIPTION AND REASON FOR CHANGE
	M. FE	
	77 360	
1		

# Purchase Analysis: It's a Job for Buyers

American Viscose uses the committee approach to purchase analysis. But only buyers—not the brass serve on the committee. The company finds that this system improves buyer morale; gives purchasing the benefit of experienced group thinking.

Purchasing analysis at American Viscose Corporation is a job for the Indians instead of the Chiefs. Their object: large savings through better buying methods and procedures.

Analysis is handled by a special Analysis Committee—a rotating group of four buyers in the Avisco purchasing department. Neither George Alles, director of purchases, nor Joseph H. Saville, general purchasing agent, are members of the committee.

Avisco prefers "analysis" to value analysis to describe the work of the committee. "The group generally evaluates categories," says Alles, "rather than specifics unless necessary. They talk about steel, lubricants, or equipment rather than any particular item.

"Value analysis covers a single item or piece of equipment. Analysis includes many related items. We call our group the Analysis Committee because its job is to see the forest through the trees."

Alles sees two big advantages to letting the buyers run the analvsis show:

(1) High Morale. Morale of Avisco's 11 buyers is kept at a high level because each knows he will eventually get a chance to serve on the committee. And since the committee looks into many areas, the buyers quickly gain experience that might take many years otherwise.

Two buyers from each purchasing division—raw materials and equipment and supplies—are on the committee. The work gives

them a chance to get away from routine buying and to become familiar with problems they don't meet in their regular work. Production line buyers speak up on MRO problems, while equipment buyers get into discussions on raw materials. Committee members are rotated periodically.

Buyers gain more stature and assume greater responsibility by participating in the work of the analysis committee. Through brainstorming and frank, no-holds-barred discussions — free from any inhibitions they might have if their bosses were present —they come up with many ideas that are incorporated into regular purchasing activities.

(2) Balanced Skills. The committee approach to purchasing analysis gives Avisco the benefit of four opinions on a subject. Each of the four men has a different background; each can bring his own skills to bear on the problem.

The current committee is made up of an engineer, an expert on shop practices and tools, a raw materials specialist, and an economist. Every problem gets a thorough going over from many points of view—and solutions are reached quickly.

The company feels that it can get better results from the committee approach than from assigning a full-time analyst to the job. It figures that buyers who are in day-to-day contact with purchasing problems can, as a group, solve them better than a man who works only on analysis.

When the committee was set

up about a year ago, it was given three primary objectives:

- Analyze value of groups of purchased items;
- Eliminate costs in purchasing;
- Provide more service to other departments.

Here are some results of the projects considered thus far:

(1) The committee is well into the job of analyzing value. Its first step was to prepare a complete list of all purchased items on IBM cards. Then previous purchase records were checked to determine the dollar value of these materials and components.

The group found that of the 8000 maintenance items used by one of Avisco's seven plants, about 25 accounted for most of the dollar volume. It is now making a special cost-reduction effort on these items.

(2) Only preliminary discussions have been held on eliminating purchasing costs. But the committee has already begun comparative studies of tasks handled by buyers, expeditors and clerks. Its goal is to end duplication, waste, and unnecessary effort.

The committee has probably made most progress in finding ways to serve other departments better. In a typical meeting, the question of how to develop better liaison with the company's engineering divisions came in for a thorough airing by committee members Abbott Smith (current chairman), Wilbert H. Butts, Charles T. Kline, Jr., and John K. Tabakian. All are veteran Avisco employees, averaging over 15 years service. They work with



Avisco's Analysis Committee (l. to r.): Charles T. Kline, Jr., Wilbert H. Butts, John K. Tabakian, and Chairman Abbott Smith.

General Purchasing Agent Joseph H. Saville: "You can't beat the interchange of ideas that we have here."



various divisions on engineering requirements and specifications for the rayon, cellophane, and acetate fibers Avisco makes. Despite a good working relationship, various time-consuming problems come up with individual divisions. The basic goal was to work out a system to prevent duplication of effort when a similar problem arose with another division.

Charles Kline, who was assigned by the committee to research the situation, reported:

"A similar problem—better inter-department liaison—came up about five years ago with our technical department. The way we solved it was to have assigned a full time liaison man between purchasing and the technical department. He works with all the buyers, is available to work with

us and the plants whenever the occasion demands.

"We consult him on everything that has to do with complaints, improvements, and research. We can do a better job of buying because we know these technical problems. Therefore, I think we ought to consider this type of arrangement with our engineering groups."

The report was discussed informally by the committee. Advantages and disadvantages of having a liaison man were outlined in detail. Using two liaison men—one for maintenance and one for capital equipment—was suggested. Smith recommended that the technical division liaison man be asked to come to the next session to present his views. And Butts was asked to get the opin-

ions of the other buyers.

Although this meeting took only a brief half hour, much was accomplished. The subject of liaison with engineers was analyzed and a possible solution put forth. Factual data was presented to help the committee make a decision.

When the committee reaches a decision, it sends a recommendation to Alles for approval. If he gives it his O.K., steps are taken immediately to get the project underway.

Avisco's analysis committee helps the individual buyers, the purchasing department, and the company as a whole. Says Saville, "You can't beat the interchange of ideas we have here. Every buyer is an analyst—and our analysis committee supplements the individual buying effort."



# Should You Use

## **Custom-Molded Plastics?**

New processes and materials make it possible to produce plastic moldings that couldn't be made a few years ago. Here are the facts that will help you determine whether use of custom-molded plastics can help you cut costs and improve your product.

By John H. Woodruff

NEW PLASTICS applications have been appearing in such diverse and unlikely industries that practically no manufacturer can rule out the possibility of making use of plastics. The purchasing agent seeking a way to lower costs and improve products may find that custom-molded plastics can help his company keep ahead of competition, increase capacity without large capital investment, and open up new markets with new products or new packaging.

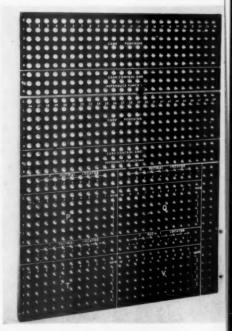
To make a quick preliminary survey on whether custom molded plastics fit into your operation, check the questions compiled by Monsanto Chemical Company (see box). Generally it has been found that if you can answer "yes" to any of these questions, you should investigate custom-molded further.

The plastic industry has grown rapidly in the development of new materials and molding and decorative techniques. Moldings

that were impossible just a few years ago, are being successfully run today at astoundingly rapid rates. For example, until recently it was virtually impossible to obtain rigid polyvinyl chloride in other than extruded forms. For years industry has successfully used pipes and fittings of this material, but has been unable to take advantage of molded PVC. Now rigid polyvinyl can be custom molded on modified injection molding equipment.

As another example, the unusual properties of nylon can now be used in molded sizes and thicknesses which were previously impossible. With a new molding technique, massive sections and solid blocks of nylon can be produced practically and without sinks.

When you buy custom-molded plastics, the molder, in effect, becomes your plastics department. He can provide technical knowledge to help you choose proper materials and suggest designs that capitalize on the inherent economic advantages of molding. He can suggest color effects and decorative treatment. Most impor-



This control panel, originally machined from laminated phenolic sheets, is now molded to close tolerances. Before molding, each hole had to be drilled individually. Now drilling, milling, and some finishing operations have been eliminated and the part costs two-thirds less.

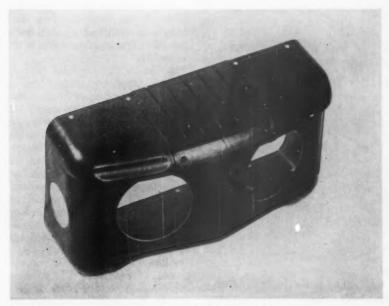
Mr. Woodruff is president of Auburn Plastics, Inc., Auburn, N.Y., and associate editor of "Plastics Technology."



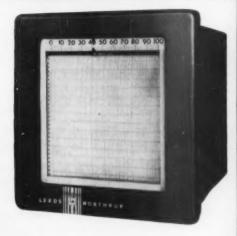
Above: Accurate gaging of molded parts down to .001 in. is possible with contour projection. Parts are projected onto translucent screen at selected magnification. By comparing image with chart lines, operator can determine if part meets prescribed tolerances.

Below: An earlier model of this camera contained 101 separate parts. This model with only 35 molded components actually offers more features. Engineer and molder combined integral molding of extra features at no added cost beyond the dies, reduced secondary operations, and designed parts to cut assembly time.





A polyester glass-reinforced air-conditioner housing offers cost savings over metal as well as improved physical properties. The metal housing previously used presented corrosion problems and picked up and magnified vibration and transmission sounds. Plastic solved both problems.



Instrument cases made of thermosetting plastics offer these advantages over metal: resistance to corrosion, high impact strength, less weight, and no painting or separate finishing work.

### **Custom Molding Check List**

A "yes" answer to any of these questions means that it might be worth your while to investigate custom-molded plastics to see if they can improve your product or lower costs.

(1) Could you realize significant savings Yes No

(1) Could you realize significant savings Yes No in your manufacturing costs by reducing assembly operations?

(2) Do you use 50,000 or more per year of any product or part? (Depending on the job, smaller quantities may also be feasible.)

(3) Do multiple finishing operations run up your production costs? (For instance, do you use parts which must first be cast, then ground, then tapped before they are ready for assembly?)

(4) Do you have frequent rejects or customer complaints because of denting, imperfect finish or poor assembly?

(5) Must any component of your product be sub-assembled before you can assemble the finished product?

(6) Is surface finishing or coloring of your product a separate operation?

(7) Would reduced weight of your product bring about significant savings in shipping charges?

(8) Are you considering a new product, a new part or new package that would require large capital investment which you would like to avoid at this time?

(9) Would a display or re-usable type package help increase your sales?

(10) Does the maintenance of multiple forming dies run up your manufacturing costs?

(11) Do any of your products or product parts require expensive corrosion-resistant coatings?

(12) Could you operate more efficiently or benefit from increased capacity without large capital investment by "jobbing" out presently required parts or completely new parts?

(13) Could you improve your market position or your profit potential by sub-contracting for the manufacture of new products related to your present line?

(14) Have you previously rejected the possibility of using plastics because your own manpower is not technically trained in producing plastics; an investigation more than two years old showed that plastic materials would not offer the properties you wanted; you were not prepared to make an investment in expensive molding equipment?

tant, he will have the responsibility of designing a mold that produces consistent quality at the most rapid rates.

A qualified custom molder can help you make a detailed assessment of possible product improvements for lowered manufacturing costs and determine whether savings or product improvement would result.

Here are some points to watch when checking your operations for ways you may be able to make use of molded plastics:

 Examine the parts that are currently being machined, die cast, stamped or formed as likely candidates.

(2) Examine the functions of these parts. Investigate the chemical, mechanical, electrical, thermal and other properties necessary. This will help in the choice of materials.

(3) Study blueprints and samples of these and related parts to see if they can be manufactured

in one piece.

(4) Estimate the number of pieces required for immediate use and for long-range ultimate use. This will have a bearing on the kind of mold required. The most common benefit users of molded plastics enjoy is that of making the mold do a lot of work that would otherwise require assembly labor. In other words, a molded piece is so designed to incorporate the functions of other parts in an assembly.

As in everything else that is manufactured, quantity has a great bearing on cost. For example, the cost per thousand for a multiple cavity job can drop as much as 75% as the quantity increases from 25,000 to 200,000. Significant savings can also be realized as mold sizes change or if parts are made on automatic presses. On parts converted to automatic compression presses from conventional presses molding costs have been reduced up to 71%.

Although the automatic process is not adaptable to all types of compression molded parts, it definitely has great advantages in areas where it does apply—such as higher quality, consistent and accurate reproduction, and usually considerable savings.

# When Is A Trade Secret A Secret?

Cost data, customer lists, technical information, etc., which give a company advantage over competitors who do not know or use them, may be defined as trade secrets. Under the law, disclosures of such facts are betrayals of a trust.

By Albert Woodruff Gray, Legal Editor

A LARGE mail order and retail sales corporation recently complained that it had been deprived of the goodwill and trade of 23,000 customers by the unfair methods of a manufacturer.

With this manufacturer the retailer had contracted for the purchase of chain saws with a 30-day warranty against defects. The retailer in turn made this same warranty to its customers. If, upon the purchase of a saw, the customer wished to avail himself of the warranty, he filled out a card with his name and address and the date of purchase, and forwarded it to the retailer. Over a period of four years, 23,000 of these cards were received. Each time, the retailer advised the manufacturer when customers adopted the warranty.

At the expiration of the purchase contract with the manufacturer the retailer undertook the production and sale of its own chain saws. The original manufacturer's then began to solicit orders for replacement parts from the 23,000 customers who had returned warranty cards.

### Injunction Refused

The United States Court of Appeals refused to grant the retailer an injunction to prevent the manufacturer from soliciting these customers. The court said, "A customer list procured under circumstances giving rise to a relationship of trust can be considered a trade secret.

"However this retailer must take certain measures to guard the secrecy of the information... If there had been an express agreement between the parties as to the secrecy of the list and its restrictive use the retailer would, of course, be entitled to the relief it seeks. There was no such express agreement

here. The law may however, imply an agreement to keep information secret where there is a confidential relationship and the facts evidence the intention that the information be kept secret.

"Since this retailer acquiesced in the knowledge that the manufacturer had the same list it cannot now be permitted in good conscience to claim the list was a trade secret."



"It is unquestionably lawful for a person to gain possession through proper means of his competitor's product and through inspection and analysis create a duplicate, unless, of course, the item is patented. But the mere fact that such lawful acquisition is available does not mean that he may through a breach of confidence gain the information in usable form and escape the efforts of inspection and analysis."



"The exclusive right to make reproductions of a picture does not justify another to make and sell photographs. So the furnishing of a dozen blueprints so the employees of the purchaser may become thoroughly conversant with the machinery, is limited publication. It did not give the right to a use which was not in the contemplation of both parties and which would give unfair advantage to a competitor."

Protection afforded by the courts is comprehensive. Its extent is well outlined in a recent decision on an action brought for the misappropriation of trade secrets by the manufacturer of electric phosphorus furnaces.

In that instance an engineer who had been employed by the company for over ten years became a consultant for a competing manufacturer. There he used the physical drawings and blueprints belonging to his former employer and applied information and knowledge he had acquired of the production methods of that manufacturer.

In granting an injunction in this case the court outlined not only the extent of this protection but the circumstances under which it becomes available to the owner of such information.

### Reasons for Liability

"One who discloses or uses another's trade secret without the privilege to do so is liable to the other if

"(a) he discovers the secret by improper means, or

ti (b) his disclosure or use constitutes a breach of confidence reposed in him by the other in disclosing the secret to him, or

"(c) he learned the secret from

facts that it was a secret and that the third person discovered it by improper means or that the third person's disclosure of it was otherwise a breach of his duty to the other, or,

a third person with notice of the

"(d) he learned the secret with notice of the facts that it was a secret and that its disclosure was made to him by mistake."

To this statement of the law the court added the definition of a trade secret. As "any formula, pattern, device or compilation of information which is used in one's business and which gives him an opportunity to obtain an advantage over competitors who do not know or use it."

This the court amplified with the further comment: "The engineering and design data, cost data and other information, alone and in combination, was under a pledge of secrecy."

"This law can also be applied to restrain the disclosure of such information by those who exploit confidential information for their benefit, betraying the trust that has been imposed in them.

Such an instance occurred when a steel car manufacturer discovered that plans and blueprints supplied to customers for their assistance in ordering repairs and replacements had been appropriated by a competitor and used in the production of a similar product.

The court forbid the use of these blueprints by the competitor. It said: "The exclusive right to one to make reproductions of a picture does not justify another to make and sell photographs. So the exhibition of a blueprint of machinery in a frame in the office of a purchaser, although done by permission of the manufacturer, a copy of whose drawing it is, certainly is not a general publication and an abandonment of exclusive rights in the drawing.

"The furnishing of a dozen such prints so that the employees of the purchaser may become thoroughly conversant with the construction and operation of the machinery, is a limited publication. When the car manufacturer permitted its customers to have blueprints, it did not give them the right to a use which was not in the contemplation of both parties and which would give an unfair advantage to a competitor."

### Sue for Injunction

In a Federal court in Illinois this same law there served as authority for an injunction against the use of plans and specifications for freight containers that had been unlawfully appropriated by a competitor to whom these designs and plans had been disclosed in confidence in negotiations for a sale of the idea. Later, when containers appeared on the market embodying these plans, the owner sued for an injunction against their further exploitation.

In an interesting decision, the court did not find anything essentially wrong with copying a product, but only with the means by which information making the copy possible had been obtained.

"Our function is that of condemning the employment of improper means to procure the trade secret. Those who gain their information improperly are brought to book in recognition of the general principle that intentionally inflicted harm is actionable unless privileged.

(Please turn to page 222)



Conover-Mast Purchasing Agent Walter Willets (holding glasses) gets together with other company department heads to work out the details of a rush promotion program. Teamwork such as this does a lot to reduce costs and improve quality.

# How Purchasing Uses Teamwork to Save

By Walter E. Willets, Consulting Editor

AT Conover-Mast Publications, purchasing is geared to buy goods and services on a tight delivery schedule. This is particularly true in scheduling printing for advertising promotion.

In spite of the fact that "rush" jobs are the rule, rather than the exception, we have found that we can make substantial cost savings in buying printing. Two factors contribute to the success of our program: the concept of readiness to accept worthwhile innovation and the willingness of our buyers—together with other departments—to look at the job as a whole.

For example, one of our publications, such as Mill & Factory or Purchasing Magazine, might plan a direct mail campaign. The sales promotion manager, who conceives the campaign, discusses it with the art department and with purchasing while it is still in the formative stage. For the

time to save is in the planning stage, not in the last minute rush of production.

Purchasing, working as a team with art and promotion, can then suggest ways to get more job for the money. This does not necessarily mean cutting costs. The object is to get more value for a given price. Cheap printing is no good if the final result is not satisfactory.

For example, purchasing may suggest a slight change in the size of the printed piece to fit a standard envelope that we buy in quantity. Savings over a special envelope may run several dollars per thousand.

Knowing a job is in the works enables us to buy paper in advance. Another publication may be doing a similar job. We combine the orders and get a better price. Both magazines save.

We also encourage vendors to suggest ways of cutting costs. Good vendors profit by helping us make a profit.

Recently Space/Aeronautics,

another of our publications, provided a good case history of teamwork. This involved willingness to change methods and to consider the entire project, as well as supplier cooperation.

The sales promotion department was preparing a booklet containing several hundred illustrations of magazine ads. Many of the originals were in color and had to be reproduced in black & white. Before work started, the sales promotion manager called upon the art director and the planning agent. A printer was also called in.

#### **Check for Cost Reduction**

In the past, the job had been done by photographing the ads, pasting them into the layout, making halftone plates, and reproducing them by offset. However, this was an expensive project.

Our first approach was to ask the printer to estimate his cost of making halftones directly from the originals and stripping them in as part of his plate operation.

(Please turn to page 208)

This article is based on a talk Mr. Willets gave at a recent meeting of the Purchasing Agents Association of New York.

# N.A.P.A. Convention Followup

These papers were presented at the recent convention of the National Association of Purchasing Agents in Los Angeles.

### How to Train Purchasing Personnel

By W. R. Stelzer, District Purchasing Agent, Aluminum Company of America

THERE ARE basic techniques that can be used to accelerate the training of new personnel. Most of these principles which apply are found in the N.A.P.A. booklet, "Training Purchasing Department Personnel," prepared by the association's committee for professional development. Also, McGraw-Hill's excellent "Purchasing Handbook" does a good job of covering various training methods.

As with any endeavor, an objective should be given to the individual and a measure of guidance on how to achieve that objective

The basis for all other steps in training, is a thorough knowledge and understanding of the company's purchasing policy. Every member of the purchasing department should understand that he is his company's only representative to many people. As such, he must know a great deal about his company's history, geography, products, processes, equipment, raw materials, personnel, policies,

objectives, ethics and ideals. Also, his personal appearance and habits should be acceptable to others.

The standard techniques of purchasing and the routine procedures for the acquisition of materials and services are probably the simplest part of purchasing and can be learned in many ways. The individual may progress from simple purchase orders to complicated contracts as his abilities develop.

During this time, such subjects as ethics, reciprocal trade relations, and vendor relations can be discussed. Care should be used to help develop the trainee's judgment, rather than just giving him a set of rules.

The ability to be effective in the profit-making efforts of purchasing cannot be over-emphasized. One of our best tools is value analysis, often a joint effort with several other departments. Therefore, developing good organization and cooperation with other people in the company by purchasing personnel is essential.

Good relations between departments should be a part of any training program.

Throughout the training period, the trainee should be given various problems to solve and situations to handle. Guided personal experience is a relatively painless teacher and is certainly more interesting than lectures.

By all means, take him to your local association meetings and provide him with a membership, if possible, so that he can take part in the educational activities of N.A.P.A. and have access to its various publications and conferences. Such outside contacts can be invaluable. Beyond this, the new man should be encouraged to take part in outside activities such as civic clubs and community projects.

Above all, place the emphasis on the profit-making opportunities of a purchasing department. Instead of placing purchasing in a service category, let's find good people and train them to purchase for profit.

## Tips on Selecting Purchasing Personnel

By Wayne A. Rodman, Purchasing Manager, Jantzen, Inc.

THE KEY to the successful operation of a business lies in selection, placement and treatment of the individual employee. Planned selection depends on seven ingredients.

1) Accurate job specifications. Ob-

tain all the important facts concerning the job to be filled and the conditions under which they are to be performed. Outline this information for a check-off list.

2) Recruiting. You can't sit back and wait for good men to come in.

Go out and actively recruit enough applicants to give you a proper selection. Search your own department, your own company. Ask acquaintances in other companies in your area. Canvass the colleges, engineering or law schools, purchasing agents associations, business magazines and newspapers, and salesmen.

3) Screening. A preliminary screening of applicants will quickly eliminate those clearly unqualified.

4) Testing. The proper use of a psychological test helps to obtain objective information on what candidates can do. Later reference to these same tests help in

making the final judgment as to who gets the job when two or more candidates qualify.

5) Checking applicant's previous work and school records. This information may help determine the "can-do" qualifications as well as the "will-do" qualifications of the applicant.

6) Patterned interview. The preplanned patterned interview is especially important as applicants for executive or supervisory positions must be interviewed much more thoroughly than applicants for regular plant and office work. These personal interviews help round out findings and information by systematic coverage.

7) Making the final overall rating. For the final decision summarize, analyze, and then pick the man that most closely matches the job.

### How to Establish Purchasing Standards

By Wilbur J. Pierce, Supervisor, Staff Services Div., Purchasing Dept., The Detroit Edison Co.

SELECTION, training, and performance measurement are so interwoven that it is hard to discuss each by itself. We can't begin to talk about performance standards without a job description. You can't expect to measure how well a man is doing until you know what he is supposed to do. So step one is: prepare a job description.

Next, we need to list the defineable elements of the job. Some can be measured statistically: number of salesmen interviewed, number of orders placed, dollars spent, etc. Others are more intangible, but still measurable: bid summaries, records, maintenance, etc. So step two is: list

job elements.

Unfortunately, the data most readily available, the statistical elements, are of the least value in measuring buyer performance. It is necessary to list those personal traits that are important to a buyer's performance—memory, flexibility, persuasive ability, and ethics. This is the third step.

To establish a standard for each criteria, a short paragraph usually suffices. A simple measurement of excellent, good, fair, or poor can be used. A numerical scale, or any other measurement device would also be satisfactory.

Each measurement must be weighed according to its importance. A buyer's ability to apply value analysis is more important than his appearance. Assuming you had 40 performance criteria, the value of each would not be the same. Experience shows that this must be tailored to each company. Step five then is to fix measurement values.

The rating of buyers is largely a matter of obtaining a consensus of opinions. They can be solicited from the buyers' co-workers, from requisitioners, and from the boss. Of course, the man's immediate supervisor is the key to successful rating. On him falls the job of soliciting other opinions, preparing the rating sheet and finally reporting back to the man the results of the rating.

### Selling Management on Value Analysis

By W. G. East, Purchasing Agent, John F. Queeny Plant,

TOP MANAGEMENT is not easily sold on any new idea. Purchasing is only one of many management considerations, and value analysis is but a portion of this. If management is not procurement minded, even though appreciating the value of good buying, good leaders are needed to put value analysis across. Basic questions to ask are: How is the value analysis program to be or-

ganized? Who is to administer or supervise it? What other departments will have responsibilities in the program? And what relationships will exist between buyers and others involved in the program?

One approach is to start with value analysis strictly as a purchasing function, but with planned objectives for expansion. Value analysis, while an effective purchasing tool, is by no means the exclusive property of the purchasing department. It belongs to all phases of any company's activity, and to be most successful must be a combined effort. There will be resistance at times, and your program and ideas will need powerful allies.

Why should the purchasing department administer the program? Some reasons are: 1) Cost consciousness;

 Experience in cost analysis and negotiations;

 Wide contacts with suppliers and knowledge of their products and abilities:

There are reasons why perhaps others should administer the program. A committee on which various departments are represented is one approach and has been used in many companies with considerable success. The relationship between the buyers and others on the committee, especially engineers, should develop a high degree of recognition and understanding.

Purchasing may coordinate the program, serving as a record center for achievement, as a publicity center, or as a reporting center. With its widespread knowledge of vendors and products, it can serve as an appointment or meeting center. Efforts in these directions are important to the program. Records of achievement usually are found in purchase order files.

#### Give Credit Where It's Due

Achievement can be most effective in focusing attention on the value analysis program if properly reported and propagandized. Reports should go to management as well as through company newspapers, newsletters, or house organs. Be sure to give credit where it is due. Nothing can kill the program quicker than

for one department to claim all the credit.

The supplier should be an integral part of the value analysis team. By enlisting his assistance we gain his resources of technological know-how and research facilities. He can give expert counsel on material and application problems.

Management approval of your program is necessary, but it is not enough. Your program must be accepted and approved by the entire organization, for their enthusiastic support will be much more effective than if they merely follow management directives. Management, in turn, will be influenced by the attitude of the entire organization.

# Purchasing's Role in Quality Control

By C. G. Thomas, Manager—Purchasing,
Dresser Manufacturing Div., Dresser Industries, Inc.

CONTROLLING the quality of materials purchased is a continuing and dynamic undertaking, transient in nature. The quality of materials and goods purchased at Dresser Mfg. must have attributes and characteristics which will guarantee acceptance and leadership of our products in the market place at competitive prices. The price consideration cannot be divorced from quality; they are inseparable.

Tools and procedures—They fall into three fundamental groups: (1) control procedures, (2) the reports furnished to purchasing, and (3) the reports furnished by purchasing.

Control procedures — These are what we call the sign-off on (1) enginering change notices, (2) new products, (3) engineering material standards and specifications, and (4) delivery promises. All changes in product design are controlled through an engineering change notice. A change in product design that involves material specifications is not valid unless it has been agreed to by purchasing and the other depart-

ments that will be affected. When new products are designed, purchasing must be in agreement on the materials specified, can be procured in the quality and quantities required within an identified and firm price structure.

Standard costs—As a part of the planning, purchasing establishes standard costs for all materials and goods purchased. This includes transportation, pattern costs, scrap, etc.

Material variance report—Each month our accounting department tells us whether we have met our standard costs and the amount of the variance by commodity. This is the most valuable control tool that we have in that it enables purchasing and management to check performance in accordance with plan.

Scrap report—This report is issued weekly and covers both manufactured and purchased items, where the scrap exceeds 1% or rejects 3%. This quickly identifies any areas where we have a serious problem and action is immediately taken. In addition, detailed inspection reports are pre-

pared daily.

Quality control index—This index is furnished by quality control, and it is primarily designed to keep scrap rework costs and inspection costs in our plants under control. It covers a period of five years. Purchase of sub-standard materials would be immediately reflected in this index; i.e., poor material would mean higher inspection, rework, and scrap costs.

The reports and controls described above aid immensely in controlling quality at the exact level when those concerned want to and do use them intelligently. Monthly control report—Purchasing issues a monthly control report. This report is equivalent to a monthly balance sheet for the purchasing operation and advises our president exactly where we stand to date in the important areas of material price variance, profit improvement, value analysis, purchase commitments, price trends, lead times, quality, deliveries, administration, management development, traffic, and disposition of scrap.

## How to Handle Surplus Equipment

By R. B. Tobey, District Purchasing Agent, Crown Zellerbach Corp.

FOR THE PURPOSE of this discussion, trade-in will be considered as turning in an old or obsolete piece of equipment on new equipment—and by so doing reducing the expenditure for the new equipment. Sale will be considered a completely separate transaction.

The key to the question is how can we come out best financially. In connection with this aspect, taxes must be considered. From this standpoint, selling has the advantage. Assuming the equipment has been fully depreciated, any income from its sale can be treated as a long term capital gain. The Federal income tax is 25% on long term capital gains, compared to 52% for normal corporate income.

If the equipment is traded in, the new equipment may be set up on the books at a figure lower than its actual cost. It will be depreciated over a period of years and the depreciation charged into operating costs. This will tend to increase the income, which is

taxed at the 52% rate.

This question then comes to mind: if we don't trade in the equipment will we be able to sell it? Here's how to handle this problem. In requesting bids on new equipment, offer for sale the old. But make sure it is understood that you may or may not sell the old equipment.

#### Establish Current Value

On many types of equipment—such as crawler tractors, shovels, cranes and earth moving machinery—the bidder will offer two prices in addition to a quotation on the used equipment. If not required to buy your old equipment, he will usually have a price about 5% lower. This will vary in different parts of the country and will depend to some extent on the market for used machinery.

By getting bids in this manner, an approximate current value of the used equipment is established. Based on these values, many times the equipment can be sold to employees or small contractors, taking advantage of the 5% lower bid previously mentioned.

Employees are usually particularly interested in pickup trucks and passenger cars. Sales of this type are made on an "as is—where is" basis. Maintenance records are made available to the purchaser and the mechanical department furnishes a report on the approximate condition of the equipment. Supplying this information creates good will and aids in future sales.

If used machinery is sold to the supplier of the new equipment, the transactions should be handled separately. This eliminates any possibility of setting up the wrong value on the books.

If you are in doubt about your own situation, discuss the matter with the individual responsible for handling tax matters for your company. The situation may vary among companies due to their policy established with the Internal Revenue Department on depreciating capital expenditures.

- END

## **Purchasing Intangibles**

By William T. Reynolds, Director, Purchases and Stores, Los Angeles Metropolitan Transit Authority

SALESMANSHIP is often referred to as the intangible force in business. Production, and even advertising (sales second cousin) can, it is claimed, be satisfactorily compounded by formula, but not so with salesmanship. Here all formulae take flight in advance of the premise, "the man makes the sale!"

Certainly there's a measure of efficacy in the law of average as applied to the frequency of the sales pitch, but towering over customer interest, product knowledge, "home-office backing," there

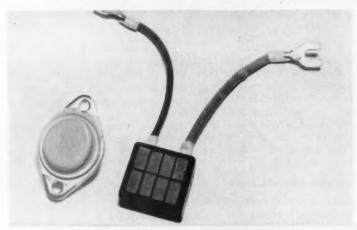
exists this Aladdin-like intangible, a non-transferable quality. This personal radiation, it is asserted, so permeates the entire transaction that buyer deduction and evaluation topple like pins in a bowling alley. Under its spell, buyers become supine prisoners of verbal barrage, awaiting only the coup de grace to end all resistance with the ultimate doffing of the cap to the accompaniment of the ecstatic shout of victory, "sold!"

This is, of course, only one school of thought. Like so many

fundamental truths, this conception of "salesmenship becomes, through over-simplification, diluted to only half truth, so that in its application to career-purchasing people, it savors of what our legal friends term "reductio ad absurdum" . . . an argument reduced to an absurdity. We must, however, hasten to acknowledge that continued outstanding success in selling depends in no small degree on personality and character traits plus a keen knowledge of humanity. So in commerce it

(Please turn to page 208)

### **Products and Ideas**



An eight thermocouple Frigistor module (right) alongside a typical germanium transistor. Frigistors make it possible, through cooling, to operate electronic devices at higher power and greater efficiency.

# Tiny Thermoelectric Units Handle Big Cooling Jobs

THE DEVELOPMENT of the fuel cell, which produces electricity without moving parts, might well make the mechanical generation of power obsolete (see Feb. 1st issue, p. 64). Thermoelectricity, made practical by units like the Frigistor, could do the same for the standard refrigeration compressor.

Thermoelectricity is a property of those materials which produce an electric current when subjected to a difference in temperature. These materials will produce cooling when an electric current is passed through them in one direction, and heating when the current flows in the reverse direction. Primarily a property of the element tellurium, thermoelectricity has been known since 1821.

It is only since 1950 that it has been possible to produce suitable materials to make an efficient unit. Even today, thermoelectric materials are not widely used in the Western world. In Russia, however, they have found use in power generation for radios in remote areas, in refrigeration for cooling and air-conditioning the TU-114 jetliner, and in missile applications.

A semi-conductor material (like the silicon and germanium used in transistors), tellurium is combined with two or three other elements to form a thermoelectric system. Frigistors, products of the General Thermoelectric Corp., Princeton, N. J., are made of Neelium—a complex material system composed of tellurium, bismuth, selenium, and antimony.

The alloy is used to fabricate thermocouples, eight of which are combined into a module measuring about one in. square and one-quarter in. thick. This assembly is enclosed in a plastic case. Heat and current are transmitted through two connecting pigtails.

A typical application for which Frigistors are already available, is in devices to pump heat away

Only a handful of thermoelectric elements are needed to replace the bulky compressor system of a refrigerator. The thermoelectric industry is eyeing a \$3 billion dollar annual potential market for cooling equipment alone.



from electronic units. The heat pumping capacity for an eightcouple Frigistor is from 10 to 15 watts.

Still in the future is the use of thermoelectricity to replace the cooling compressors and coils in home refrigerators. Air conditioning and heating systems for homes and offices could be replaced by thermoelectric units built into the walls.

Compared to other methods of cooling-such as gas expansion, ice, or liquid gases-thermoelectricity is far less complex. It requires no moving parts, uses no materials that are corrosive, takes up a fraction of the space, and permits continuous operation. At present, the cost is not competitive with mechanical systems, but the young industry is confident that this problem can be overcome. But for electronic and laboratory cooling applications, the new devices are definitely practical in a number of industries today.



to box a heavyweight

Heavy products like Hotpoint ovens are easy to pack in corrugated boxes made by West Virginia's Hinde & Dauch Division. On the packaging line, Hotpoint people pick up a box—not the oven—save time and effort with H & D designed automatic closing and sealing equipment.

Hotpoint requires a resourceful corrugated box supplier to maintain packing line efficiency. That's why, like hundreds of other leading companies, they depend on H & D for volume production and technical packaging service. This is another example of how West Virginia delivers such outstanding quality with economy.

Through a research investment of over \$3,000,000 annually, and almost total utilization of raw materials, West Virginia is able to serve its customers with moneysaving efficiency.

If you box heavyweights, check with the Hinde & Dauch Division, West Virginia Pulp and Paper Company, 230 Park Avenue, New York 17, New York.





# ASTOUNDING ...

DUI • • • not all companies in this country use thermoplastics (Nylon, Du Pont "Delrin," Hercules "Penton"), extruded or machined by National.



### **Products**

### Aluminum Step Blocks for Clamping



A line of aluminum step blocks for clamping can be used with either plain or step clamps. Nine sizes are available: three sizes of standard blocks 1 in. wide; three sizes of heavy duty blocks 1-1/2 in. wide; and three sizes of double duty blocks 2 in. wide. All are light in weight, have high tensile strength, and will not mar or scratch machine tool tables. Blocks are interchangeable with each other, with all sizes of steel step blocks, and with all sizes of step clamps. Northwestern Tools, Inc., 142 Hollier Ave., Dayton 3,

Write No. 18 on Place Mark Card-Page 32

### Copper and Aluminum Marking Nails



Marking nails of copper and aluminum provide permanent identification and dating. Type MN-1 is available in 2, 2½ and 3½ in. lengths with 1 in. head diameter and shank diameter of 5/16 in. Head has raised or relief marking with protective outer rim which can be numbered con-

(Please turn to page 109)



ONLY hundreds who have learned about the dollars these wonderful materials can save. And hundreds who have added bright new sales features to their product as a result of these wonderful materials.

Why? Because these materials are tough, light, and in many ways, metal-like. And National has many qualified Field Representatives to help designers apply them. And machines to precisely fabricate them. And stocks for immediate shipment.

The facts about National's thermoplastics may astound you. Write for them.

If you can't use facts about our thermoplastics, ask about our Vulcanized Fibre, Phenolite® Laminated Plastics, Kennett Materials Handling Receptacles, Lestershire Bobbins or Parsons Fine Papers... more products made better by National Research.



In Canada:
MATIONAL FIBRE COMPANY OF CANADA, LTD., Teresto 3, Ontario

For More Information Write No. 208 on Place Mark Card—Page 32

PURCHASING

# How much brighter would you like your secretary?



20%? Yes, we can brighten your secretary—and all your other people too, by improving their "eye-Q" (their ability to see better, work better). If your present lamps are 1 to 3 years old, replace them with General Electric F-40 Fluorescent Lamps tonight . . . tomorrow your building will have 20-35% more light without adding a single new fixture! G-E F-40's work in present 40-watt fixtures whether they use starters or not, cost 5¢ less than previous rapid start lamps!



50%? You can do it with new G-E PREMIUM 3 Fluorescent Lamps—most powerful 40-watt lamps on the market and the first 40-watters to deliver over 3,000 lumens! Just replace all your lamps that are 1 to 3 years old. With more light to work by, your people will make fewer mistakes . . . efficiency and morale will get a big boost. G-E PREMIUM 3 Lamps also work with or without starters. You get up to 50% more light without spending a cent on new fixtures.



GENERAL ELECTRIC...WHERE BRIGHT IDEAS BECOME BETTER LAMPS

# GENERAL ELECTRIC MONEY SAVER FLUORESCENT LAMPS CAN BRIGHTEN YOUR PRODUCTION PEOPLE AND SALES AREAS, TOO

New G-E PREMIUM 3 and F-40 Lamps are two recent examples of how General Electric lamp research saves you money and gives you more light, too. Place your next order for lamps with your G-E Lamp distributor. General Electric Co., Large Lamp Dept. C-011, Nela Park, Cleveland 12, Ohio.

Progress Is Our Most Important Product

GENERAL ( ELECTRIC

For More Information Write No. 209 on Place Mark Card-Page 32

JULY 18, 1960

For More Information about ad on following page Write No. 210 on Place Mark Card—pg. 32→ You get MORE THAN A MOTOR with

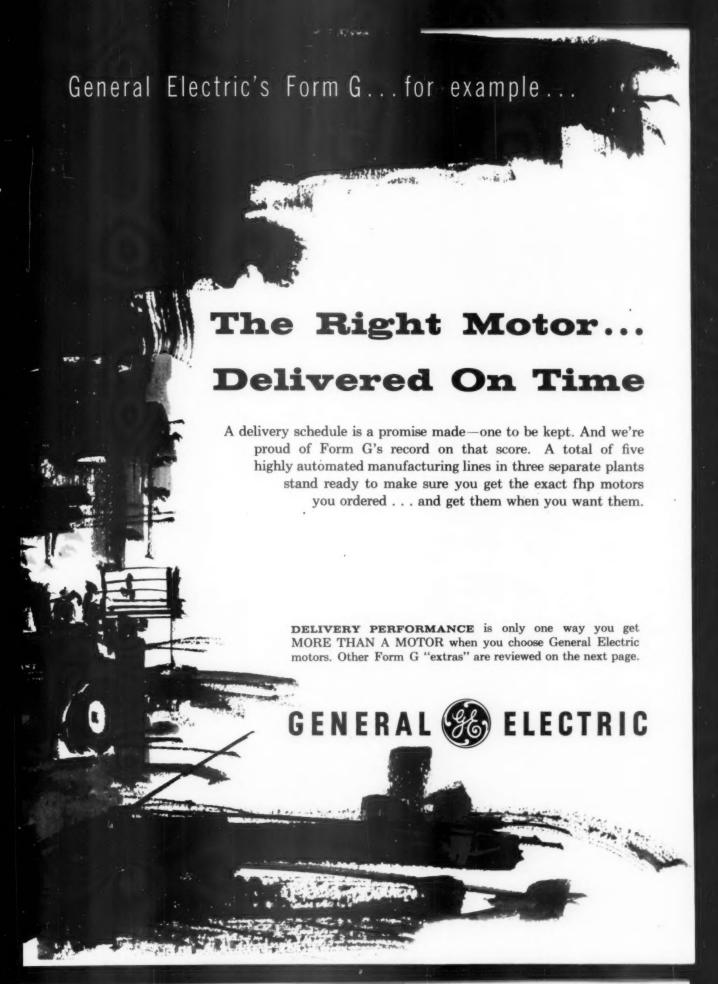




GENERAL ELECTRIC MOTORS



FRE MOTORS



## These unmatched extras make G.E.'s Form G MORE THAN A MOTOR



YEARS-AHEAD DESIGN LEADERSHIP—General Electric's year-in year-out leadership in fractional horsepower motor design and innovation helps meet your changing product demands; helps keep you "out front".



FAST, LOCAL SERVICE—A nationwide network of Electric Motor Service Stations, kept up-to-date on latest motor techniques by twenty traveling motor specialists, assures fast, local motor repair or replacement.



DESIGN VERSATILITY—Form G fhp motors offer amazing versatility and design freedom for incorporation into your product. Whatever your product requirements, there's a Form G fhp motor to meet them.



QUALITY CONTROL—"Individualized" quality control assures consistently high quality. Every Form G motor is thoroughly tested at all stages of production for top performance and long-life characteristics.



EASE OF ASSEMBLY—Compact G-E Form G fractional horsepower motors can be mounted and hooked up in a matter of seconds; offer assembly-line savings in time and money; cost less to ship or handle.



EXPERT APPLICATION AID—General Electric application engineers, experts on the Form G fhp motor and the various ways of applying it, are always on hand to help you solve your unusual motor applications.

Make sure you get MORE THAN A MOTOR...choose General Electric Form G fhp motors, available in NEMA 48 and 56 frames. For more information contact your nearby General Electric Apparatus Sales Office or write General Electric Co., Section 702-109, Schenectady 5, N. Y.



#### **Products**

(Continued from page 104)

secutively to 9,999 and show up to three lines of lettering. MN-2 comes in 2 or  $2\frac{1}{2}$  in. lengths with  $\frac{3}{4}$  in. head diameter and  $\frac{1}{4}$  in. shank diameter. MN-3 is offered in lengths of  $1\frac{1}{2}$ , 2, and  $2\frac{1}{2}$  in. with  $\frac{1}{2}$  in. head diameter and 3/16 in. shank diameter. Both MN-2 and MN-3 have depressed lettering. Special sizes on request. John Hassall, Inc., Cantiague Road, Westbury, L. I., N. Y.

Write No. 19 on Place Mark Card-Page 32

#### Air Handling and Fume Control Hose



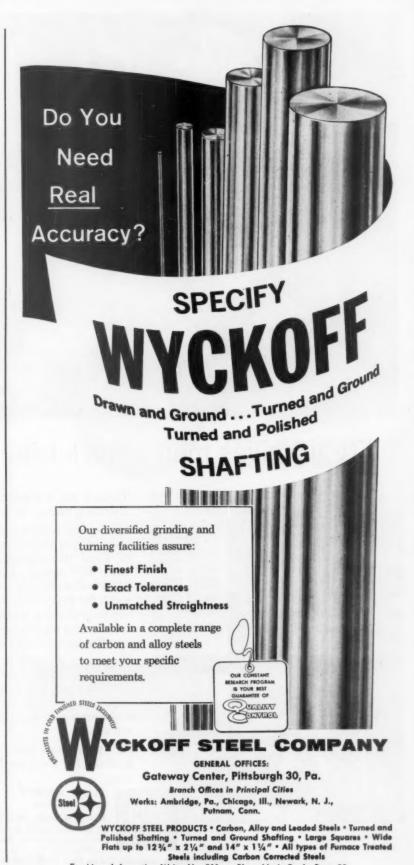
A hose of neoprene-coated fiberglass fabric, spiral-wire reinforced, has exceptional flame resistance and high burst strength. Lightweight and extremely flexible, hose is intended for permanent and temporary use in air handling and fume control applications. Operating temperature range is from minus 40 degrees F to 300 degrees F, in sizes from 1-½ to 24 in. i.d. The Flexaust Co., 100 Park Ave., New York 17, N. Y.

Write No. 20 on Place Mark Card-Page 32

#### Aluminum Oxide Abrasive for Stainless Steel

An aluminum oxide abrasive has been developed to take advantage of higher wheel speeds and grinding pressures now used in stainless steel billet and slab grinding. Abrasive is said to double metal removal rate, and fast rate of cut and long wheel life reduce total costs per pound as much as 40%. Norton Co., Worcester 6, Mass.

Write No. 21 on Place Mark Card-Page 32

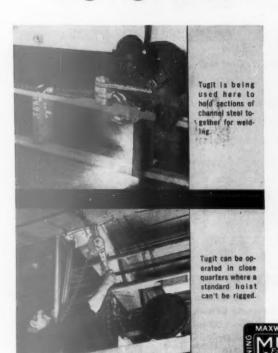


For More Information Write No. 211 on Place Mark Card-Page 32

JULY 18, 1960



## Tugit® gives men a work break that saves



Tugit is the compact, portable link chain hoist of countless uses — at any angle, anywhere.

Lifting and shifting jobs that formerly drained men's muscles and morale now yield to the powerful pull of Tugit. Maintenance men get a real work break when they operate this efficient hoist. It is geared to lift a ton with only 40 lbs. of muscle effort. They use it for everything from positioning overhead piping to relocating machinery. And, Tugit has a load brake like a regular hoist. The non-flying handle and non-fracturing hooks are other safety features.

Tugit is a problem solver whether used for maintenance or in production. Some plants install it to lift and lower pot furnace covers. Others use it to hold parts together for welding or assembly. Wherever Tugit goes into action, time, effort, and money are saved.

Ask your Shaw-Box Distributor for a free demonstration. Or write for Tugit Bulletin 15015-1C.

**TUGIT HOISTS** A product of

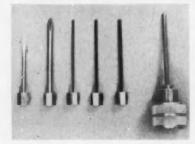
MANNING, MAXWELL & MOORE, INC.

Shaw-Box Crane & Hoist Division . Muskegon, Michigan In Canada: Manning, Maxwell & Moore of Canada, Ltd. • Galt, Ontario

For More Information Write No. 212 on Place Mark Card-Page 32

## **Products**

Torque Wrench for Precision Assemblies



A torque wrench designed for small screws speeds work on precision or miniature assemblies. Tool is particularly suited for jobs where torque setting is of extreme importance. Easy-to-hold wrenches eliminate guesswork For use with socket head cap screws from 0 to 1/4 in., wrench is adjustable or can be pre-set for specific torque requirements. Heat-treated blades come in 3 in. lengths, with different sized blades available on request. Techni-Tool Products, Inc., Dept. TW, 3860 W. Slauson Ave., Los Angeles, Calif.

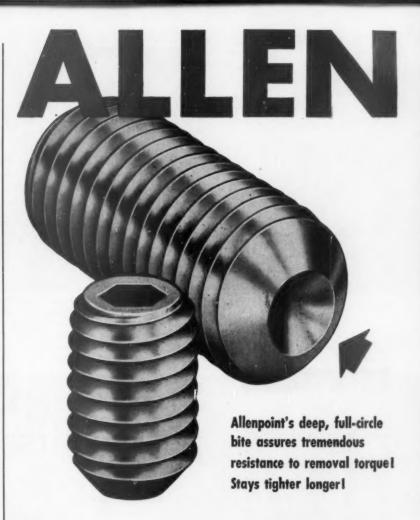
Write No. 22 on Place Mark Card—Page 32

### Dry Film Lubricant for Commercial Use



A bonded dry film lubricant is applicable to extensive commercial use because no surface preparation except degreasing is necessary. Lubricant can be applied to glass, wood, plastics or metal by spraying, dipping or brushing. Product is ideal in situations where extremes in tem-

(Please turn to page 114)



When you need a set screw that you can depend on to stay tight under heavy strain and vibrations, specify ALLENPOINT. Here's why you can always depend on ALLENPOINT: proper design of the cup diameter results in a rugged grip that makes the full-circle pattern you see here...deep, strong, clean sockets allow full wrenching leverage...and uniform Class 3A threads assure a tight friction lock over the entire length of Allenpoint Set Screws.



Ask your ALLEN Distributor for samples and full engineering details-he's always ready, willing, and able to give you prompt, practical service!



ALLEN MANUFACTURING COMPANY

HARTFORD 1, CONNECTICUT, U.S.A.

For More Information Write No. 213 on Place Mark Card-Page 32





PENCO-PLANNED SYSTEMS get stock and storage rooms organized, save hours formerly wasted by employees wandering around looking for things. Reduce fire hazard, too.



**PENCO 7-LINE** Boltless Steel Shelving is quickly assembled (and adjusted) with easy-handling channel clips. No tools required; original installation labor costs are cut up to 50%. Whether you need ten feet of shelving or four miles (as in installation above) Penco-planned systems step up worker efficiency, cut housekeeping costs and make maximum use of floor space.

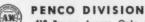
## Storage space should pay for itself, too

You don't have to look twice to see the savings and efficiency in the storage systems shown here. For Penco Planning integrates Penco steel shelving, lockers and cabinets into plant operations as carefully as you integrate your materials flow and production processes. Your Penco Dealer can help you use storage facilities to break supply bottlenecks, maintain production lines, tighten inventory control, discourage thievery, protect costly materials and dies, speed shipments. In short, your Penco Dealer can help you make storage space pay off! Call him today.



WRITE FOR Penco General Shelving Catalog No. 2400 and Locker Catalog No. 6000. They're filled with helpful facts!

## ALAN WOOD STEEL COMPANY



410 Brower Avenue, Oaks, Pennsylvania

Steel Lockers - Steel Cabinets - Steel Shelving - Book Case Units



GLEAMING-BRIGHT Penco lockers (left) encourage employee neatness and pride. Special pre-enamel phosphatizing step at Penco assures tight, tough, enamel bond ... permanently beautiful finish.

NEW SERVICE-TRUCK SHELVING (right) by Penco utilizes space once wasted in delivery and utility trucks. Wall-anchored unit speeds maintenance, repair and customer service with compartmentalized storage of tools, parts, equipment.



For More Information Write No. 214 on Place Mark Card-Page 32

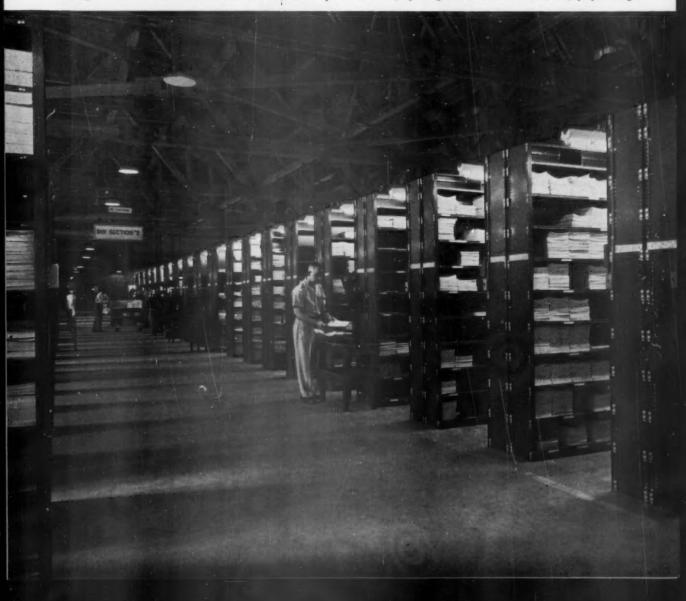


WHETHER YOU, ARE BUILDING OR RENOVATING, Penco Planning can give you the last word in a modern, easy-to-maintain locker

facility—in any size space, on any budget. Extra sturdy Penco locker design assures smooth, quiet, trouble-free operation for years.

PENCO SYSTEM below added 15% more storage capacity over previous shelving in same area. Is assembled fast with efficient channel clips

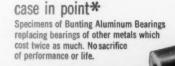
that slip into place without tools. Let your Penco Dealer help you cut every operating cost that can be controlled by proper storage.



# BUNTING SEARING ALUMINUM BARS

have you learned what Bunting Bearing Aluminum Bars can do for you?

No other low priced bearing metal delivers all the many fine qualities embodied in Bunting Bearing Aluminum. Its physical properties add up to a remarkable and ideal material for most general bearing applications. Light weight is an added advantage. It machines easily and rapidly, saving labor cost. All bars are machined on all surfaces, reducing waste metal to the minimum. And it is carried in stock in 138 sizes of 13" tubular and solid bars by your local Bunting Distributor.



1. Cylinder gland bearing. An example of how to save money on large, thick wall bearings. 2. A high speed 150,000 RPM - bearing for turbo super charger. Intricate machining, many dimensions, close tolerances. 3. Solid gear bearing to replace roller bearing. Bunting Bearing Aluminum is ideal where thick-wall its essential. 4. This thick-wall floating rod bearing affords an attractive economy in material cost, and an additional value in Jight weight.

MACHINE SHOP SERVICE... Small lots of special design bearings, not obtainable from stock, can be procured immediately from fully equipped machine shops through all Bunting Branches. The wide range of sizes of Bunting stock cast bronze and sintered bronze bearings makes the alteration of a stock item to a special bearing easy and economical. Bunting Cast and Sintered Bronze and Bunting Bearing Aluminum Bars provide the material for special sizes and designs which cannot be made from stock bearings. Your local Bunting Distributor can arrange for such work.

Ask for catalogs . . .

Me. 158—Complete listing of sizes of Bunting Cast Bronze and Sintered Bronze
Bearings and Bars, and Bunting Bearing Aluminum Bars. Pocket size edition.

Ne. 258—Complete listing of Cast Bronze Electric Motor Bearings for all makes
and sizes of electric motors.

No. 46—Technology of Bunting Bearing Aluminum. A technical treatise on the composition, machining and use of this new bearing metal. Ask your local Bunting Distributor.

The BUNTING Brass and Bronze Company • Tolede 1, Ohio Branches in Principal Cities

BEARINGS, BUSHINGS, BARS & SPECIAL PARTS OF CAST BRONZE, SINTERED METALS OR ALUMINUM ALLOYS

For More Information Write No. 215 on Place Mark Card-Page 32

#### **Products**

(Continued from page 110)

perature, vibration or dust prevail or for such applications as totally enclosed bearings where inaccessibility prevents frequent or effective lubrication. Exceptional performance and strength can be achieved by baking from ten minutes to an hour. Poly Chem., 541 S. Webster Ave., Indianapolis 19, Ind.

Write No. 23 on Place Mark Card-Page 32

#### Tiny, Low-Cost Glass Pillows and Balls



Tiny pillows and balls of glass provide low-cost material for filler, packing, filtering and tumbling applications. Pillows include both solid and hollow pieces, in lengths up to ½ in. Hollow pillows provide low-density filler material for such applications as aircraft wings or in casting of larger plastic pieces. Solid pillows are useful in chemical processing. Balls can be made to diameters of 1/2 in. And are used for applications such as anti-lint filter of automatic washing machines, where balls pick up lint which is then back-flushed. Corning Works, Corning, N. Y.

Write No. 24 on Place Mark Card-Page 32

## Zip-On Protection for Pipes and Ducts

The use of "Ductwrap" makes it possible to zip on pipes, cables and ducts a true vapor barrier and abrasion protective jacket in single step. Product is available in wide variety of jacketing and insulation materials, including in
(Please turn to page 116)

For More Information about ad on facing page Write No. 216 on Place Mark Card—pg. 32→

PURCHASING



## Simplest, surest way to a "thousandth" fit . . . right at the job

What you see here is a shim. Not an ordinary shim, but a shim of LAMINUM—and that's what makes the difference in convenience, accuracy, speed and economy.

LAMINUM is the registered trade name for the laminated shims whose layers are completely surface-bonded to look and act like solid metal. Yet the laminations are easily p-e-e-l-e-d to bring the shim to any desired thickness for an individual, perfect fit, right at the assembly line.

No stand-by equipment. No machining. No grinding. No counting. No stacking or miking. And no grit between layers—ever. That's what saves time! And cuts costs!

Shims of LAMINUM are economically custom-made to your specifications. In brass, mild steel, stainless and aluminum, with laminations of .002" or .003". For quick service, send your inquiries for information or estimates directly to ...

## THE LAMINATED SHIM COMPANY, INC.

Home Office and Plant: 2407 Union Street, Glenbrook, Connecticut West Coast Sales and Service: 600 Sixteenth St., Oakland 12, Calif.



## GET THE FACTS

Write for SHIM DESIGN Folder No. 3—eight pages of up-to-date, well illustrated design information and specifications.

## How to buy steel rings ...



#### consult with experienced maker

Find out about his background . . . experience . . . manufacturing facilities . . . how close he can come to meeting your specifications . . . what engineering assistance he can provide.

#### put your plans in his hands

When you have found this experienced, reliable supplier, send him your drawings. Give him complete details on materials, shape, tolerances you require, nature of application, and the performance you expect.

#### then let him assist you

If Edgewater is your choice, you will find that we will follow your specifications exactly. If required, we can furnish engineering assistance and suggest the material, shape and size to give you the ultimate in performance and economy.

Want more details? Write for the Edgewater brochure, which describes our facilities, know-how, and range of sizes and shapes.



For More Information Write No. 217 on Place Mark Card-Page 32

#### **Products**

(Continued from page 114)

sulation liners of asbestos, foam vinyl, silicone rubber and Thermoflex, and jacketing materials of vinyl, vinyl-coated nylon, reflective asbestos and aluminized



silicone rubber. One man can apply in single, one-step operation without special tools, and "Dustwrap" is easily zipped open for spot repairs. Continuous lengths can be supplied, shipped as flat tape for easy storage. The Zippertubing Co., 752 S. San Pedro St., Los Angeles 14, Calif.

Write No. 25 on Place Mark Card-Page 32

### Sheet Steel Separator Uses Magnetic Force



A sheet steel separator which uses magnetic force rather than impact or prying methods minimizes the problem of worker injury. Magnetic units of separator cause sheets to repel each other and top sheets to fan out with uniform space between them, permitting easy removal. "Basco" separator can be used on any shape or size sheet steel, whether nested or corrugated, and it will even separate sheets bonded together by oil or preservatives. E. V. Nielsin Inc., 575 Hope St., Stamford, Conn.

Write No. 26 on Place Mark Card-Page 32

For More Information about ad on facing page Write No. 218 on Place Mark Card—pg. 32→

## MOBIL LEADERSHIP IN THE NUCLEAR AGE

On the following pages, a report on Mobil's many activities in the field of Nuclear Radiation Research and what is being accomplished. How Mobil is meeting the challenge and problems posed by Nuclear Age Lubrication ... from America's leading protector of Nuclear-Powered Turbines.

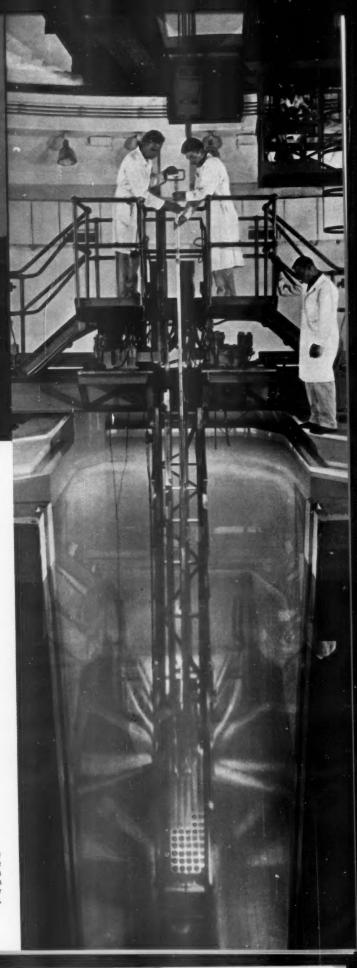


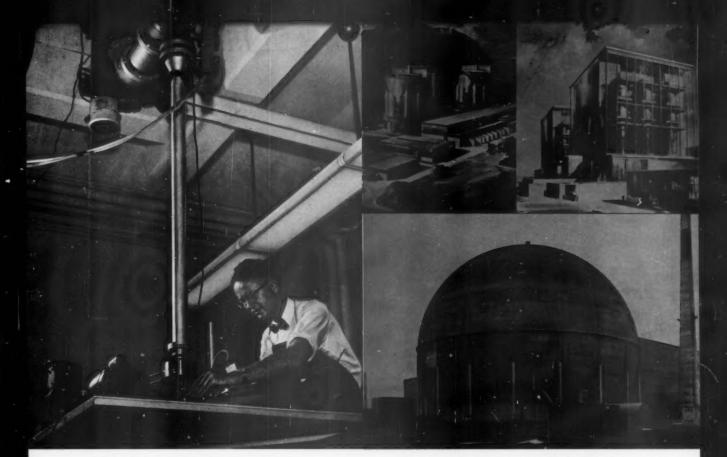
This unique dome-shaped structure houses the Industrial Reactor Laboratories Inc., where Mobil participates with companies from other areas of industry in nuclear research activities.

## Mobil Nuclear Research

As a world leader in petroleum technology, Mobil is meeting the challenge of the Nuclear Age with facilities, programs and products. No one yet has all the answers. But Mobil Nuclear Research is opening many doors to future progress. For example, Mobil is part owner of one of the world's most advanced private nuclear research facilities, Industrial Reactor Laboratories in Plainsboro, N. J. Here a 5-million watt nuclear reactor is used to explore new refining techniques, the manufacture of petroleum chemicals, and effects of radiation on petroleum products. Mobil's own nuclear laboratory near Princeton, N. J. includes a 2-million electron volt particle accelerator and other advanced equipment to probe the atomic frontier. This research is yielding new knowledge, products and processes . . . and improved lubrication for Nuclear-Powered equipment.

View of 5-million watt swimming-pool-type reactor used by Mobil at IRL. Primary purpose is to provide source of neutron and gamma rays for experimentations. Mobil scientists use this radiation source to develop new petroleum products and chemicals.





2-million electron volt Van de Graaff accelerator at Mobil's Stony Brook Nuclear Laboratory is used to irradiate test specimens . . . help Mobil study effects of radiation on petroleum materials and find improved refining techniques.

## Mobil Nuclear Lubrication

Through research, Mobil has determined the radiation limits of its present power plant lubricants, and is developing high threshold products for use where radiation exceeds these limits. These evaluations show Mobil DTE oils meet every requirement of today's Nuclear-Powered turbines. And certain Mobil extreme-pressure greases can withstand 200-million rads. In addition to these present-day lubricants Mobil has developed experimental products that resist doses of up to a billion rads, including a control-rod actuator grease approved by the United Kingdom Atomic Energy Authority. Mobil is also evaluating a method of determining condition of oil in use by adding a radiation-sensitive tracer that accurately shows when radiation limits are reached. These are some of the ways Mobil is preparing today for tomorrow's nuclear power needs.

Top-left: 360,000-kw Station being built at Hunterston, England. Right: 561,000-kw Atomic Power Station under construction at Hinkley Pt., England. Below: Dresden Nuclear Power Station in Illinois, now America's largest. All rely on Mobil.

## Mobil Protected Nuclear Power Plants

For years Mobil has been a world leader in the lubrication of conventionally powered turbines. Now in the Nuclear Age Mobil leadership continues. By early 1961 more than 60% of America's nuclear power output will be generated with the help of Mobil lubricants. America's largest atomic plant—the 180,000-kw Dresden Nuclear Power Station—protects its turbine with Mobil DTE oil. And even larger plants abroad will be Mobil protected. The 360,000-kw Hunterston plant and the 561,000-kw Hinkley Pt. plant under construction in England will both rely on Mobil. Mobil research and know-how are behind Mobil's continuing leadership in the Nuclear Age.

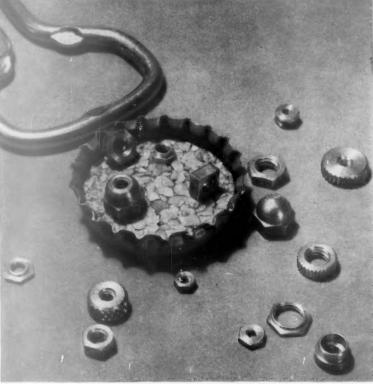
Hinkley Pt. Power Station—Built by English Electric Co., Ltd., Babcock and Wilcox Ltd., Taylor Woodrow Atomic Power Group' for Central Electric Generating Board, Hunterston Nuclear Power Station: Builders—General Electric Company Limited of England for the South of Scotland Electricity Board, Dresden Nuclear Power Station—Built by General Electric Company for Commonwealth Edison Company and the Nuclear Power Group.

America's leading protector of Nuclear-Powered Turbines!

MOBIL OIL COMPANY, 150 East 42nd Street, New York 17, N.Y.



## "TOPS" in precision...



8903-FS

## Fischer

## miniature turned nuts

Working on the premise that only the best is good enough, Fischer has developed highly specialized production and quality assurance methods for precision miniature nuts. And to assure uniform accuracy and dependability, Fischer maintains tolerances that exceed current industry standard specifications. Result: Fischer turned nuts are solving fastening and assembly problems in all types of miniaturized electrical and electronic equipment.

Fischer can supply miniatures in standard, special and odd sizes or shapes ranging from ½" hexagon, with standard or special threads from No. "0". All are furnished cleaned, burrless and ready to use.

If you are looking for extreme accuracy and prompt "on schedule" delivery at competitive prices . . . let Fischer quote your next miniature nut order.

#### WRITE TODAY FOR BULLETIN M-600



there's no premium for precision at

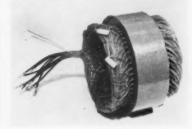
## Fischer SPECIAL MANUFACTURING CO.

471 MORGAN STREET . CINCINNATI 6, OHIO

For More Information Write No. 219 on Place Mark Card-Page 32

#### **Products**

#### AC Motors with Overload Protection



A simple, positive and fast-acting method of motor overload protection is now built into G.E.'s three-phase induction motors. Motors with protection are available up to 125 hp, frame sizes 254U to 445U, in any insulation class or enclosure. Protection is provided by two or more minature heat-sensing switches buried in the stator windings. Switches shut motor off whenever internal winding temperature exceeds a predetermined amount regardless of rate of temperature rise, making burnouts from overload practically impossible and providing instant "fail-safe" protection. System uses only two additional wires; there are no amplifying relays or involved circuitry. General Electric, Schenectady 5, N. Y. Write No. 27 on Place Mark Card-Page 32

### Vacuum Base Portable Drill Stand



A portable drill stand operated by means of a powerful vacuum base augments a popular line of magnetic drill stands. Unit will

(Please turn to page 123)



## NO WAITING FOR FACTORY DELIVERY

U. S. Indestructible® Slab Belting is the low-cost belting especially suitable for a wide range of uses by industry. It is the right belt for light assembly line work and horizontal (and slight incline) package material handling. Your "U. S." Distributor cuts the conveyer belting slab to the size of your conveying equipment, and delivers it to your plant without delay.

plant without delay.

U.S. Indestructible Belting is the long-life belting because it is made of flexible natural rubber, with thick coatings of supple natural rubber between flexible sturdy duck. The belt is orange-colored, with friction surface and skims. It has much higher adhesion than any other slab, yet costs no more. It fits the smaller pulleys of package handling equipment.

Contact your local "U. S." Distributor or use the coupon below.

I convey the following	
Please have your fle conveyor belting rea	eld representative call upon me to examine my quirements.
Name	
Name	



**Mechanical Goods Division** 

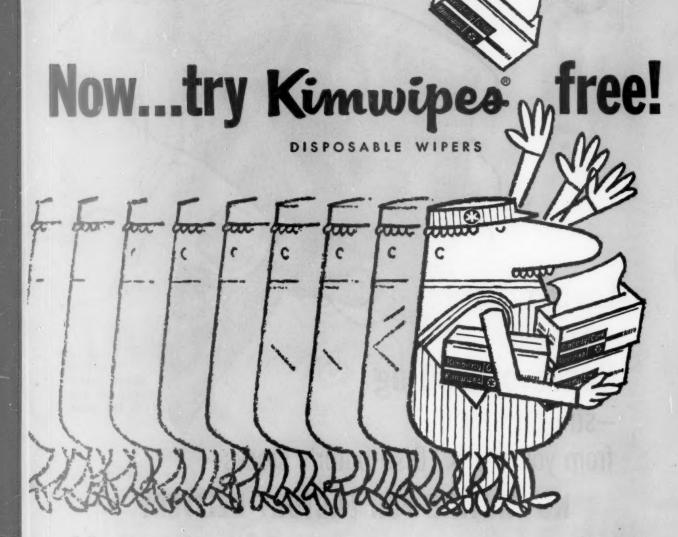
## **United States Rubber**

WORLD'S LARGEST MANUFACTURER OF INDUSTRIAL RUBBER PRODUCTS

Rockefeller Center, New York 20, N.Y.

In Canada: Dominion Rubber Company, Ltd.

For More Information Write No. 220 on Place Mark Card-Page 32



Mail the coupon today so that we can rush you your FREE box of 100 Kimwipes disposable wipers. Prove to yourself how quickly they cut production costs—how they outperform shop towels and rags! Discover how they wipe cleaner, faster, save workers' time.

Check on Kimwipes' excellent pick-up, conformability, superior wet-strength.

Super-sanitary Kimwipes pay for themselves in savings on towel laundering, alone! Available in handy pop-up packages or metal wall dispensers.

Kimberly-Clark Corporation Dept. No. PM-7 Neenah, Wisconsin Fill in this coupon, and mail it, today!

Please send me my FREE package of Kimwipes disposable wipers, Type 1300.

NAME\_

FIRM NAME\_

ADDRESS\_\_\_

CITY\_\_\_

ZONE\_\_\_STATE\_

By the makers of KLEENEX tissues ...

Kimberly Clark

PRODUCTS





De-Sta-Co Toggle Clamps are immediately available in sizes from Tiny Toggles with 42 lbs. holding pressure to giant, air-operated models with tons of holding power . . . and for special needs we'll adapt models for you. It will pay to inform yourself about De-Sta-Co features.





For More Information Write No. 222 on Place Mark Card—Page 32 For More Information about ad on facing page Write No. 221 on Place Mark Card—pg. 32

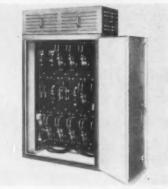
## **Products**

(Continued from page 120)

fasten itself with up to 3000 lbs holding force to any non-ferrous material for quick and easy drilling. Drill point can be rotated a full 190 degrees about vacuum base, with laterial movement up to 1½ in. for accurate positioning after base has been activated on workpiece. Drill stand weighs less than 65 lbs and is adaptable to all makes and models of portable drills. Drills up to 3 in. Bux Magnetic Products, Inc., 1353 N. Tenth St., San Jose 12, Calif.

Write No. 28 on P.ace Mark Card—Page 32

#### DC Performance from AC Cranes



A DC crane hoist controller which operates on AC power employs static rectifiers to supply DC power to a series-wound motor and its series-wound brake. Because of inherent "blocking" characteristic of rectifiers, this arrangement automatically increases motor stability for safe lowering of extreme overloads. Youngstown limit stops provide positive over-hoisting protection, and no load-retarding or load-indicating devices are required. EC&M Div., Square D Co., 4500 Lee Rd., Cleveland 28, Ohio.

Write No. 29 on Place Mark Card-Page 32

#### Flexible Steel Conduit for Wet Areas

Liquid-tight flexible steel conduit which features a polyvinyl chloride synthetic resin cover and U.L. approved provides positive protection for wiring used in wet areas. Product is intended for use

(Please turn to page 124)



YOU CAN DO BETTER WITH



## STAMPING QUALITY



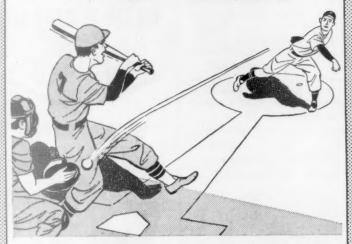
Our customers are known, for the quality of their products, and have associated themselves with us to maintain those high quality standards. We have been successful in doing just that for 45 years. If your products require the same high quality standards: it's time you checked what De-Sta-Co has to offer. Better your product—better your profits—better do it now!





For More Information Write No. 223 on Place Mark Card—Page 32

## you can't expect a no-hit game every day

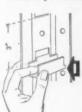


but you CAN expect the best shelving value when you buy

## BORROUGHS

## STEEL SHELVING

When you buy Borroughs Steel Shelving, you do more than just make a purchase. You make an *investment* in storage efficiency and economy that will pay dividends year in and



year out. Borroughs Steel Shelving is your best shelving investment because it's rugged and durable—simple and flexible—easy and quick to assemble and adjust. No special tools are required to assemble an entire unit—shelves can be adjusted without nuts or bolts—any unit or shelf can be moved independently.

send for catalog

Represented in Sweet's Catalog, Plant Engineering File 4G BO

Insert 4 shelf support brackets . . . no fumbling with studs, bolts, nuts or lock washers.

and then

Tilt shelf into support brackets . . . and shelf is ready for loading.

## BORROUGHS MANUFACTURING COMPANY

OF KALAMAZOO

A SUBSIDIARY OF THE AMERICAN METAL PRODUCTS COMPANY OF DETROIT

3014 NORTH BURDICK ST.

MI & KALAMAZOO, MICHIGAN

For Mare Information Write No. 224 on Place Mark Card-Page 32

#### Products

(Continued from page 123)

on pumps, pressures, welders, portable tools and on automatic lines for rolling, die casting, extruding, etc. Conduit is equipped with



copper wire positive ground. It absorbs vibration and resists flame, oil, grease, chemicals, etc. International Metal Hose Co., Bellevue, Ohio.

Write No. 30 on Place Mark Card-Page 32

## Wide Range of Magnesium Extrusions



Extruding techniques are now available to take advantage of magnesium's free-sliding, nonscuffing and non-galling characteristics, which open up a broad range of design possibilities. Interlocking units and other complex extrusions can be produced economically to close tolerances in a wide variety of shapes and Magnesium's unusually high degree of dimensional constancy is important characteristic; unlike other metals, magnesium does not wear dies as it is being extruded, and dimensions remain constant throughout entire run. White Metal & Stamping Corp., 92 Moultrie St., Brooklyn 22, N.Y.

Write No. 31 on Place Mark Card-Page 32

## 75-MILLIONTHS OF AN INCH BARRIER HALTS METAL MIGRATION



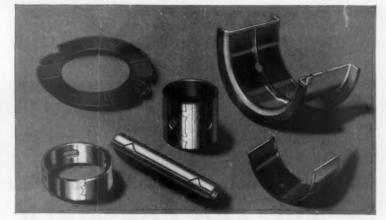
JUST BENEATH THE FRESH OVER-PLATE OF THESE F-M ENGINE BEAR-INGS (LEFT) LIES A TENUOUS DIFFU-SION BARRIER. Though this film of metal is only 75-millionths of an inch thin, it stops tin in the overplate from migrating into the lining metal beneath. Its presence is important to bearing overplate performance, particularly during the critical period of engine break-in. Maintaining uniform thinness as well as uniform composition of the plated barrier is most important . . . and most difficult to achieve on a production scale. Federal-Mogul research has developed a unique, extraordinarily precise method for controlling both the thinness and the metallic composition of this barrier, within narrow limits. And the performance of F-M engine sleeve bearings attests to the success of the method!

#### RESEARCH INTO ELECTROPLATING

problems is a continuing project in the F-M laboratories. Unusual precision equipment and facilities are employed, many of which have been specially designed and engineered by F-M to solve problems of sliding-bearing application. As a result, Federal-Mogul engineered sleeve bearings, precision thrust washers, formed bushings, and low-cost spacers provide the finest pos-

sible performance characteristics for any application.





Have you a problem with bearings, bushings or washers? Are you considering the development or redesign of an item of the type shown above? We'll be glad to show you how the job can be done most effectively and economically. For information, write Federal-Mogul Division, Federal-Mogul-Bower Bearings, Inc., 11077 Shoemaker, Detroit 13, Michigan.

## FEDERAL-MOGUL

sleeve bearings bushings-spacers thrust washers DIVISION OF FEDERAL-MOGUL-BOWER BEARINGS, INC.

For More Information Write No. 225 on Place Mark Card-Page 32



## Perfect **Packaging** at Low Cost!

## ONE MORE **CLEVELAND** CONTAINER DEVELOPMENT

#### A container that does a lot for the product!

Insecticides and chemicals require a container that dispenses correctly and sells on sight! This container, made of durable chipboard, has a cut-out metal top with a new style plastic sifter insert. Bottom of rust resistant tin plate.

Hole in top, before assembly of plastic closure, permits fast loading. No seaming operation necessary. Easily labeled individually, in multiples, or by spiral winding, this sturdy container protects contents... is attractive and inexpensive!

Our Engineering Department can assist you in designing the ideal container for your product. Ask them!

Designed to combine the best features of plastic and metal in one functional top! Sifter smoothly dials openings to sift, pour, or closed positions. Safe-sealed until special section is pressed out. Metal top and bottom may be natural tin plate or decorated in colors for added beauty.



Detroit Chicago Memphis Los Angeles Plymouth, Wis. Jamesburg, N. J.

COMPANY Sales Offices: 6201 BARBERTON AVE. . CLEVELAND 2, OHIO

> ALL-FIBRE CANS - COMBINATION METAL AND PAPER CANS SPIRALLY WOUND TUBES AND CORES FOR ALL PURPOSES

CLEVELAND CONTAINER CANADA, LIMITED Fair Lawn, N. J. Plants & Sales Offices: Toronto & Prescott, Ont. - Sales Office: Montreal

New York City Washington, D.C. Rochester, N. Y. West Hartford. Conn.

> Abrasive Division at Cleveland

For More Information Write No. 226 on Place Mark Card-Page 32

## **Products**

## 91% Faster Run-Down Speed



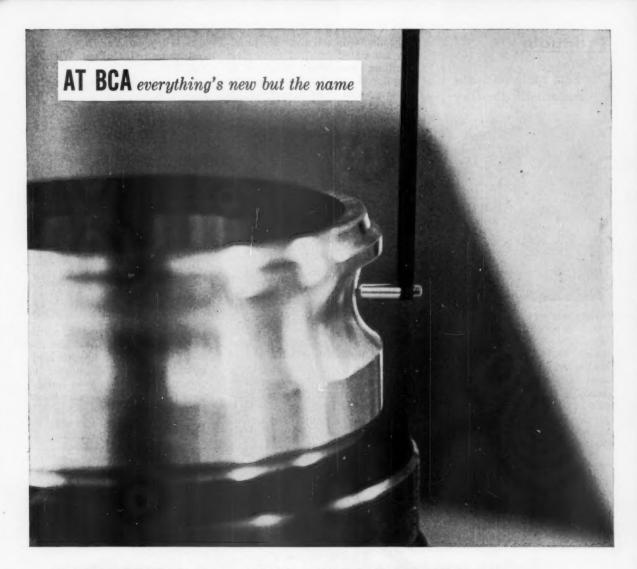
An improved heavy duty "Impactool" has 91% faster run-down speed. Despite increased speed, 34 in. bolt capacity tool is compact, being 2-5/16 in. shorter and thus permitting greater maneuverability in cramped quarters. To increase versatility, it is also available with 3, 6 or 8 in. extended anvils with 34 in. square drive, and a 1 in. square drive or a quick change anvil with % in. hexagon recess. Tool delivers 1000 impacts per minute, with a free speed of 4300 rpm. Direct drive between motor and hammer gives greater torque and speed. Side to center clearance distance is only 1-11/16 in., over-all length to shoulder of driver is 734 in., and weight without socket is 11 lbs. Ingersoll-Rand Co., 11 Broadway, New York 4, N.Y.

Write No. 32 on Place Mark Card-Page 32

## Contact Adhesive with **High Heat Resistance**

A contact type adhesive with fast solvent release is particularly suited to production line panel assembly. For volume users in bonding laminated and decorative plastic materials and other types of panel materials to particle board, plywood or metal, adhesive can be used in both spray and machine-type roller-coating applications. It has heat resistance up to 180 degrees F, and may be used with little or no forced drying, depending on speed of work in process. B.B. Chemical Co., Sub. of United Shoe Machinery Corp., Cambridge, Mass.

Write No. 33 on Place Mark Card-Page 32



## **NEW ONE-OF-A-KIND MICROGRAPH**

## draws pictures for bearing research

This greatly magnified stylus is drawing a picture of the microscopic imperfections in a bearing raceway... measuring each one to within a few millionths of an inch. The picture-on-tape which comes out of this specially modified micrological instrument is an important tool in BCA's research on ball bearing performance.

This is just one of the precision instruments in the Temperature-Humidity-Controlled Instrumentation Room which is the center of BCA research on bearings. The result of this program is revealed in on-the-job performance of BCA bearings. They roll dependably under heavy loads and all kinds of adverse conditions.

New testing facilities at the BCA laboratories also include specially designed equipment, often identical with equipment in customers' plants. Here, BCA bearings are tested to exceed customer specifications under the exact operating conditions experienced by the customer!

BCA ball bearings are standard original equipment . . . replacement, too . . . for nearly every kind of industry. For example, automotive, earth moving, agricultural and machine tools. The wide line of ball bearing sizes and types, plus BCA's research and extensive new testing facilities, pays off for bearing users. Consider the performance record of BCA ball bearings the next time you purchase or specify bearings. For more information, or for assistance with bearings problems, contact Bearings Company of America, Division of Federal-Mogul-Bower Bearings, Inc., Lancaster, Pa.

## BEARINGS COMPANY OF AMERICA



DIVISION OF
FEDERAL-MOGUL-BOWER
BEARINGS, INC.

For More Information Write No. 227 on Place Mark Card-Page 32

#### Products

#### Fast and Accurate Automatic Profiler



An automatic machine tool which is specifically designed for 360 degree profile milling under tracer control operates by following an easily prepared sheet steel template with an extremely sensitive tracer stylus, the same size as the milling cutter. Complex, irregular two-dimensional shapes can be produced with speeds, feeds and accuracy usually associated with precision plain milling operations. Machine is equipped with 5 HP spindle drive motor, with 7 changes from 375 to 5200 rpm. Unusually fast metal removal, better finishes and increased cutter life are results of powerful drive motor and pre-set constant feed (up to 80 in. per minute) of tracer along template. Pratt & Whitney Co., Inc., West Hartford 1, Conn.

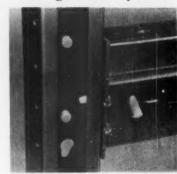
Write No. 34 on Place Mark Card-Page 32

### Aeorosol Spray for Fluorescent Marking

visibility fluorescent High enamel for emergency safety marking can now be applied quickly with a finer-tip spray dispenser. Aerosol sprayer consists of three elements-a can of propellent, an unbreakable plastic spray head, and glass jar which holds the enamel. Where durability rather than speed is concern, enamel should be applied over white undercoat and receive a clear topcoat. Yellow, vermilion. orange or red, DuPont, Wilmington, Del.

Write No. 35 on Place Mark Card-Page 32

### Safe and Solid Storage Rack System



A storage rack system which can be installed without the use of tools features a unique loadlocking device. Components of system are made of cold formed steel finished in a metallic based paint. Frames consist of 3 in. x 3 in. columns with 11/2 x 11/2 in.

(Please turn to page 133)

## **Specialized Appliance** Motors . . .



Single-stage worm gearmotor. Rolled thread on output shaft actuates traveling nut.

## **Show How Compact Design Can be Obtained** For Your Product

For devices - vacuum cleaners, floor polishers, food mixers and the like where it is important to obtain a compact, light-weight design, streamlined styling and favorable cost, a Lamb® specialized appliance motor will provide optimum results. May we demonstrate these advantages of Lamb motors for your new or redesigned products? Descriptive folder sent on request.

THE LAMB ELECTRIC COMPANY . KENT, OHIO A Division of American Machine and Metals, Inc. In Canada: Lamb Electric — Division of Sangamo Company Ltd. — Leaside, Ontario

amb Electri



Parts for double-shaft floor polisher. Shaft has two rolled worms



Nozzle agitator motor for use with canistertype vacuum cleaners. (Single coil field)



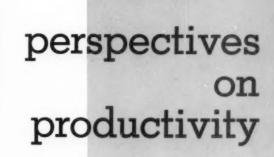
Custom-built motor and fan assembly for upright domestic vacuum cleaners.



for vegetable juicer.

Divisions of American Machine and Metals, Inc., New York 7, N. Y. TROY LAUNDRY MACHINERY . RIGHLE TESTING MACHINES . DE BOTHEZAT FANS . TOLHURST CENTRIFUGALS FILTRATION ENGINEERS . FILTRATION FABRICS . NIAGARA FILTERS . UNITED STATES GAUGE . RAHM INSTRUMENTS . LAMB ELECTRIC CO. . HUNTER SPRING CO. . GLASER-STEERS CORP. For More Information Write No. 228 on Place Mark Card-Page 32

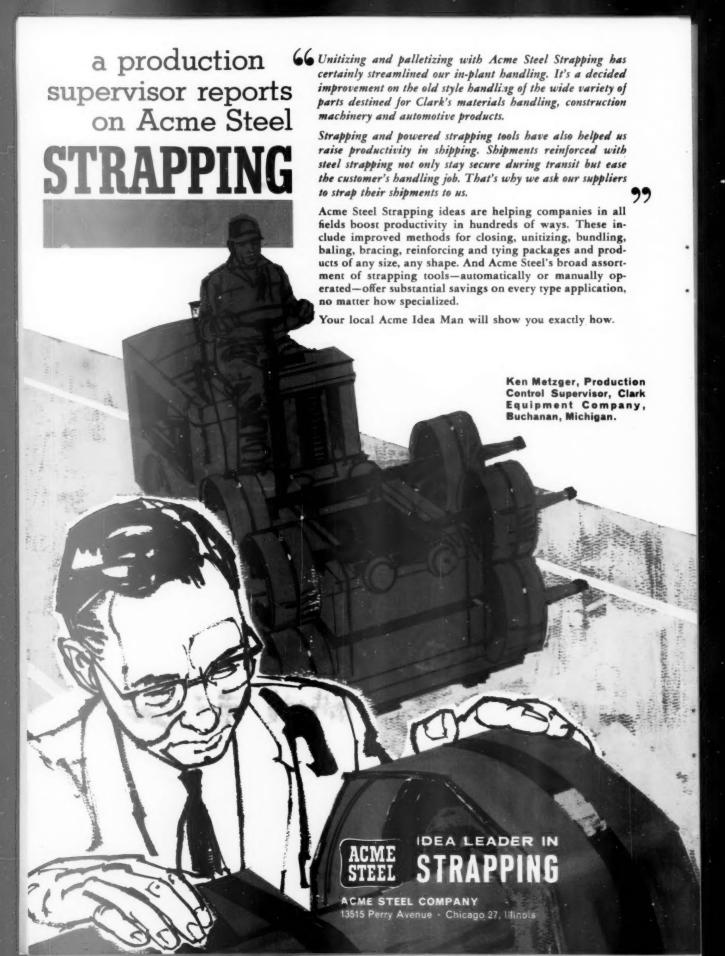
For More Information about ad on facing page Write No. 229 on Place Mark Card—pg. 32→

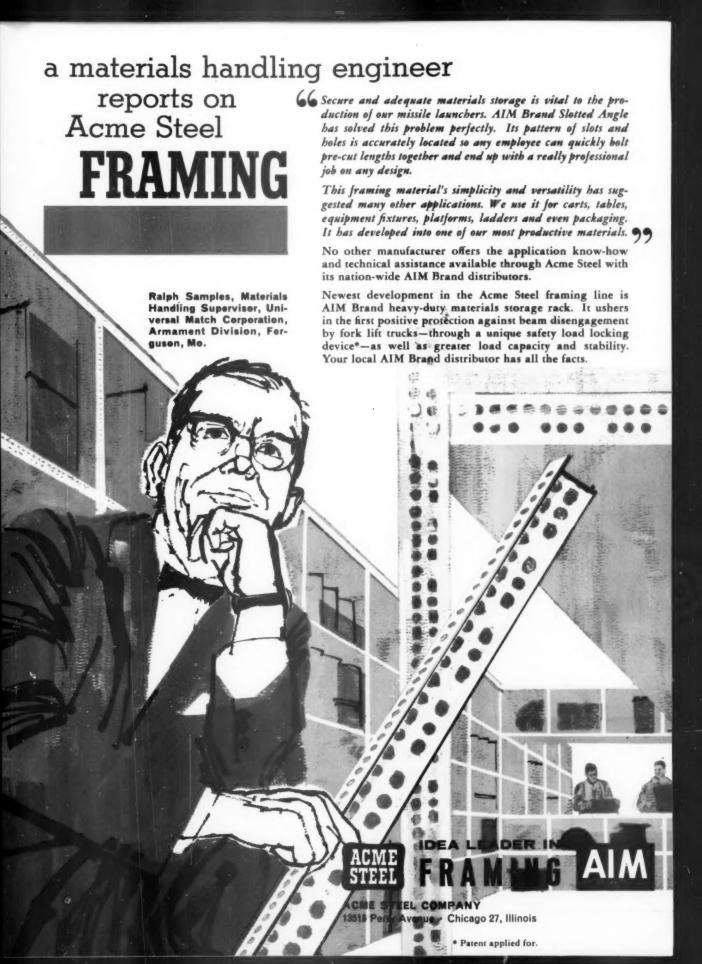


Three plant management men offer their views
on how proven ideas from Acme Steel are
increasing productivity and lowering
costs in vital areas of plant operation.









a sales manager reports on Acme Steel

## **STITCHING**

Packaging quality and cost are very important factors in our competitive sales picture. The saw blades we produce for industrial and agricultural users must be packaged securely, yet economically enough to keep prices attractive. In fabricating and reinforcing our special corrugated containers, we find that Acme Steel stitching methods total out lowest in cost-per-closure. The smooth, nonstop operation of these high-speed machines not only results in better packaging, but eliminates production bottlenecks.

Acme Steel wire stitches are cut and driven with machinegun efficiency from smooth, continuous coils of wire. No method—not glue, not tape, not staples—equals wire stitches for closure and fastening security and production economy. They ignore temperature and moisture, are unbeatable in strength, uniformity and low labor cost. And only Acme Steel manufactures complete lines of both sutching machines and wire—for box closure, book binding or product assembly fastening of virtually any type material. How can wire stitching most profitably increase your productivity? Ask your local Acme Idea Man.

Harvey Osterholm, Sales Manager, Saw and Clutch Disc Divisions, Curtis Manufacturing Company, St. Louis, Mo.

ACME STEEL STITCHING

ACME STEEL COMPANY

13515 Perry Avenue · Chicago 27, Illino

## **Products**

(Continued from page 128)

channel sections welded to the columns and used as front-to-back and diagonal bracing. Standard frame has capacity of 23,000 lbs.; heavy duty frame will take 30,000 lbs. Safety load-locking device prevents accidental disengagement of beam. Frames range in height from 6 to 12 ft. in 12 in. increments and come in depths of 28, 32, 36 and 44 in. Acme Steel Co., 135 St. and Perry Ave., Chicago 27, Ill.

Write No. 36 on Place Mark Card-Page 32

## Thermoplastic Top-Entry Top-Adjusting Valves

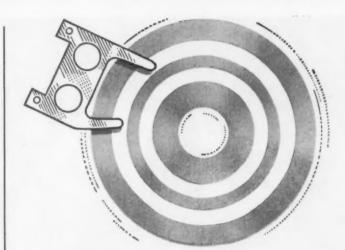


Top-entry thermoplastic valves permit on-the-line maintenance almost instantly. One-man, one-hand operation removes or installs valve bonnet, one-piece ball-and-stem and self-lubricating Teflon seating inserts. Adjusting nut permits adjusting ball seating force from the top. Valves are made of OPVC (unplasticized polyvinyl chloride) for operating temperatures to 150 degrees F or Penton (chlorinated polyether) for hot corrosive service to 250 degrees F and higher. They come in 1/2 through 3 in. nominal pipe sizes, threaded, socket or flange type. Tube Turns Plastics, Inc., Louisville, Ky.

Write No. 37 on Place Mark Card-Page 32

## Tapping Screws Eliminate Hole Drilling

An improved hole drilling tapping screw eliminates hole punching or drilling of light gage sheet metal. Screw will not walk, skid or creep. It not only drills its own (Please turn to page 135)



## METAL GRAPHITE CONTACTS

AND RADIO INTERFERENCE NOISE LEVELS...

Since shielding and filters to reduce radio noise caused by sliding contacts are often cumbersome and always costly, it is essential that contact materials be used which, in themselves, create the least radio noise interference.

Stackpole Laboratory tests backed by extensive field experience indicate that Stackpole silver graphite operating against silver rings give satisfactory results on most sliding contact applications calling for low radio noise levels. Good radio interference reduction results are likewise obtained with Stackpole electrographite grade L31 contacts operating against electrographitic rings, as well as against silver and gold rings.

In addition to reducing radio noise interference, sliding contacts must also be able to operate at high altitudes under high pressure conditions in dry, inert atmospheres, with excess moisture, and with oil vapor. All of these ambients have come within Stackpole experience with the resulting development of materials which work well under such conditions.

Give us the contact radio noise reduction problem and the chances are excellent that Stackpole can recommend materials or testing procedures to solve it.

STACKPOLE CARBON COMPANY, St. Merys, Pe.

BRUSHES • CONTACTS • YOLTAGE REGULATOR DISCS CATHODIC PROTECTION ANODES • SEAL RINGS • CLUTCH RINGS • FRICTION SEGMENTS • CHEMICAL ANODES POROUS CARBON and dozens of other related products.



## STACKPOLE

CONTACTS BRUSHES

For More Information Write No. 230 on Place Mark Card-Page 32





1500 S. 50th St., Philadelphia 43, Pa.

## welding source

... Arcos provides an effective answer with a complete, diversified selection. This assures you the best performing product for every job . . . Arcos quality controls assure dependable results with top savings in production time and dollars. And Arcos technical service is the "ace in the hole" that assures you performance satisfaction, always.

For full information on the Arcos line send for new Welding Guide and Catalog.



WELDING WIRE



COATED ELECTRODES

For More Information Write No. 231 on Place Mark Card-Page 32







#### **Products**

(Continued from page 133)

hole and forms its own thread but has an integral washer with a serrated face that acts as a built-in brake to minimize stripping and spinning. Screws are designed to be used with a ¼ in. power screw



driver with adjustable clutch, and magnetic driver socket that fits any standard power driver is available. Only one size socket is needed, since all screws from #6 to #10 have same size hex head. Parker-Kalon, Div. of General American Transportation Corp., Clifton, N.J.

Write No. 38 on Place Mark Card-Page 32

### Single Extinguisher for All Types of Fires



A universal fire extinguisher approved by Underwriters' Laboratories is effective for use against all four standard classes of fire: paper and wood; burning liquids; live electrical fires; and combustible metal fires, including magnesium. Universal effective-

(Please turn to page 138)

## YARDS AHEAD!



Barreled Sunlight gives you **measurably** more for your money!

You can measure the cost of paint two ways. Price per gallon is the most obvious . . . but least reliable. A far more accurate way to figure it is by the square yard . . . including labor costs which today take 80¢ out of every painting dollar.

Figured this way, it's easy to see why cost-conscious building and maintenance engineers specify Barreled Sunlight Engineered Paints. Their experience shows that a gallon of Barreled Sunlight covers up to 20% more area... and covers it better! This extra "yardage" is just one of many Barreled Sunlight features. Smooth, dirt-resistant surface is another. Ability to stand up under severe conditions still another. Plus the fact that Barreled Sunlight means fewer paint purchases in the long run!

All things considered, Barreled Sunlight Interior and Exterior Paints give you full measure and more for your painting dollars. Learn how much more now by writing Barreled Sunlight Paint Company, 18-6 Dudley Street, Providence 1, Rhode Island.

FILL OUT AND MAIL YOUR COUPON NOW!

Barreled S	STEE STEEL
	FOR A BETTER LOOKING, LONGER LASTING PAINT JOB AT LOWER COST
Carreled Sunlight Paints	Barreled Sunlight Paint Company  18-G Dudley Street, Providence 1, Rhode Island  Please send me a free copy of your new booklet  "How To Reduce Painting Costs".  Name
	Company
	Address
	CityState

For More Information Write No. 232 on Place Mark Card-Page 32

## NOW! Fuses that...

Safely interrupt fault currents up to 200,000 amperes...

Limit fault current to very low values

Hold 500% load for minimum of ten seconds

Buss Low Peak fuses can completely revolutionize the protection of the entire electrical system.

Protect Mains, Feeders, Branch Circuits, Motors, Controllers, Switches—no matter whether the fault current is 1,000 amperes, 25,000, 100,000—or as high as 200,000 amperes.

Reduce stresses and prevent damage to Panel-boards, Switches, Motor Controllers other circuit components—because let-thru fault currents are limited to exceptionally low values.

Prevent work stoppages, lights out, waste of time and money—because long time-lag keeps them from opening needlessly on motor starting currents or other harmless overloads.

Permit increasing interrupting capacity and current limitation on present system at minimum cost. Before designing a new installation—
or modernizing old installations—

GET ALL THE FACTS



Knowledge without action is of little value—but ACTION NOW may save you money—increase operating efficiency and reduce electrical hazards to a minimum.

BUSS LOW-PEAK fuses fit standard Switches and Panelboards and are available in N.E.C. sizes from 15 to 600 amperes in both 250 and 600 volt ranges.

Write for BUSS LOW-PEAK Bulletin Now... or use coupon.

Bussmann Mfg. Division McGraw-Edison Co. St. Louis 7, Mo.

## BUSS Low-Peak FUSES

SHORT-CIRCUIT LIMITING ELEMENT



Bussmann Mfg. Division, McGraw-Edison Co. University at Jefferson, St. Louis 7, Mo. Please send BUSS Low-Peak Fuse Bulletin LPS.

Name.

Title

Company

Address

.City..

.......

For More Information Write No. 233 on Place Mark Card-Page 32

137



## RADIATION

Accuracy instrumentation is based on the radiation of gamma rays from a source unit containing radium-226 or cesium-137. Source units are effectively shielded by housings cast in Meehanite by Hamilton Foundry. The density, and soundness of Meehanite castings provide the positive protection essential for safe and reliable instrumentation.

When buying castings, the skill and integrity of Hamilton Foundry is your best insurance that specifications—and delivery schedules—will be met.

\*AccuRay is the registered trade mark of Industrial Nucleonics Corporation

GRAY IRON . ALLOYED IRON . MEEHANITE . DUCTILE (NODULAR) IRON . NI-RESIST . DUCTILE NI-RESIST . NI-HARD



1551 LINCOLN AVENUE • HAMILTON, OHIO • TWINDROOK 5-7491
For More Information Write No. 234 on Place Mark Card—Page 32

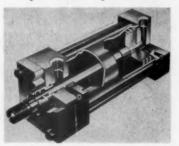
#### Products

(Continued from page 135)

ness eliminates need for variety of restricted-use extinguishers. Extinguisher does not require annual recharge and can be easily checked through simple visual inspection. It is safety-designed for close approach to fire; operator is protected from heat of flames by cloud of powder that is nontoxic, non-abrasive and non-conductive. Alim Corporation, 11 Park Pl., New York 7, N.Y.

Write No. 39 on Place Mark Card-Page 32

## "Thousand Pound" Hydraulic Cylinders



A line of power cylinders for use in medium-high pressure hydraulic service are intended for use with 1000 p.s.i. pumps. Cylinders are available in bore sizes from 1 in. through 8 in. They are of square head and tie rod design, and case hardened and hard chromium plated piston rods are standard. Drip-free rods and leak-proof ports are featured, and fourteen different mountings are available. Hannifin Co., 501 S. Wolf Rd., Des Plaines, Ill.

Write No. 40 on Place Mark Card-Page 32

### Fireproof, Non-Toxic Non-Fuming Cleaner

An economical water soluble liquid chemical provides quick, safe and effective removal of grease, oil, gum, carbon, wax, ink, dye and other soils from all metals, plastics, concrete, glass and other porous and non-porous surfaces, without fumes or danger of explosion. Non-toxic, non-fuming cleaner also contains an inhibitor to prevent corrosion on ferrous and aluminum surfaces. Elgene Co., 152 E. First St., Mount Vernon, N. Y.

Write No. 41 on Place Mark Card-Page 32



## HALLOWELL

STOOLS AND CHAIRS

give you everything you want!



Model 200 Steel or Presdwood covered



Model 206 Same as 200, with clamp type steel backrest.



Model 220 Stool. 2-inch swivel ball bearing casters.



Model 250 Shaped plywood seat, hinged



Model 260 Seat adjusts for tilt, height Hinged



Model 232 K.D. Adjustable stools in package of 6.



Model 241 Adjustable revolving seat, tubular legs.



Model 245 Same as 241, with backrest.



Model 276 Adjustable revolving contour sea

Everyone in the shop sits more comfortably, more efficiently on Hallowell chairs and stools. And what a variety! Models with tubular or channel legs—polished steel glides or with casters. Round or contoured seats—revolving or stationary—fixed or adjustable in height. Look into the Hallowell line today. It will pay off in better work from happier people.

Mail coupon today for FREE Catalog

COLUMBIA-HALLOWELL Division SPS Jenkintown 31, Pa.

Please send me the Hallowell chair catalog.

Name

(Please Print)

Company\_

Address\_

Zone 5

COLUMBIA-HALLOWELL Division



JENKINTOWN 31, PA. . SANTA ANA, CALIFORNIA

where reliability replaces probability

For More Information Write No. 235 on Place Mark Card-Page 32



## C. G. HUSSEY & CO.

HUSSEY MADE IN U.S.A. TO THE STANDARDS OF AMERICAN INDUSTRY

(Division of Copper Range Co.)
Rolling Mills and General Offices
Pittsburgh 19, Pennsylvania

Write for the Hussey 32 page Stock List

Complete warehouse stocks in Pittsburgh • Cleveland • Cincinnati Chicago • St. Louis • Philadelphia • New York (Long Island City) For More Information Write No. 236 on Place Mark Card—Page 32

#### **Products**

#### Pick-Up Broom for Fork Lift Trucks



A pick-up type broom for almost all makes of hydraulic loaders and fork lift trucks features a 6 cu. ft. capacity hopper. Broom cleans a 5 ft. path, putting bottles, paper cups, sand and other unwanted debris in a hopper which can then be raised by loader or fork lift to dump into truck. Easily installed broom is driven by hydraulic motor powered by loader or fork lift hydraulic system. Gutter brush and sprinkler system for dust control are optional. Sweepster, Inc., Dexter, Mich.

Write No. 42 on Place Mark Card-Page 32

## 2500 to 25,000 RPM Variable Speed Drive



A variable speed drive is designed for sustained operation at speeds from 2500 to 25,000 rpm. Unit eliminates external gear boxes, belts or pulleys and stands less than 2 ft. high. A specially engineered gear increaser is featured. Available with up to 5 HP dripproof, totaly enclosed or explosion-proof motors. U.S. Electrical Motors, Inc., Box 2058 Terminal Annex, Los Angeles, 54, Calif.

Write No. 43 on Place Mark Card—Page 32

## A real self-drilling screw!

## don't punch! don't drill! JUST DRIVE

P-K Tapits actually drill their way into light gage sheets when driven with a power driver! You eliminate hole drilling or punching with this newest idea in tapping screws from Parker-Kalon... speed sheet metal assemblies up to 50%

What's more, P-K Tapits have a serrated washer, integral with the head, that minimizes stripping, by acting as a built-in brake.

Production line tests with millions of P-K Tapits prove these advantages you get with no other screw:

Unique drill point—Tapits start drilling immediately! The cuneiform (pyramid-type) point prevents walking, skidding or creeping!

Uniform Hex Head—Same size hex head on the entire range of Tapits from #6 to #10 means you need only one size driver socket. Sharp corners, well-filled driving faces reduce socket wear.

Advanced washer design—the serrated washer scientifically distributes driving stresses . . . , minimizes stripping.

P-K Tapits are exactly root diameter. Tapits hold far better because thread in engagement material mates perfectly.

Properly hardened—P-K's exclusive laboratorycontrolled hardening and tempering process results in a uniformly hardened screw with a tough core.

USE P-K'S MAGNETIC DRIVER SOCKET FOR POWER DRIVING!

You need only one size driver socket to drive any P-K Tapits! Get the P-K driver socket with a strong Alnico magnet that firmly holds the Tapits. Fits any 'A'' driver with adjustable clutch. Socket can be refaced to extend life.

## PARKER-KALON

originator of the tapping screw
PARKER-KALON, a division of General American Transportation
Corporation, Clifton, New Jersey. Offices and warehouses
in Chicago and Los Angeles.

## P-K TAPITS

TEST P-K TAPITS FOR YOURSELF! ASK YOUR DISTRIBUTOR FOR FREE SAMPLES

For More Information Write No. 237 on Place Mark Card—Page 32

JULY 18, 1960

For More Information about ad on following page Write No. 238 on Place Mark Card—pg. 32→

## IN PORTABLE ONLY MSA OFFERS



What does "full line selection" mean to you? In portable instruments at MSA, there's an A to Z selection of onthe-spot sampling units for dusts, mists, fumes and smokes.

These precision instruments have come a long way since the first canary was used underground for detecting carbon monoxide. We remember when miners risked their lives on the tell-tale flutterings of a little yellow bird.

A generation ago, in 1927, we began work on our first colorimetric detection instrument. Hardly a year has gone by since, that we haven't added at least one new instrument to our extensive line. And we're still adding.

Now, MSA portable instruments keep strict tabs on industrial atmospheres in working areas 'round the world. Factory-trained MSA representatives, well-seasoned in customer-oriented experience, recommend without bias from this complete line. 26 from this line appear here.

Perhaps a talk with the MSA man about dust and gas hazards in your plant would prove helpful.

OVER 3600 SAFETY ITEMS: gas and dust instrumentation, head-eye-face protection, dust and fume respirators, axygen breathing apparatus, gas masks, artificial resuscitation units, first aid supplies and kits, noise detection and ear protection devices, instruments for continuous process stream control, ventilation equipment, and many other items.

MINE SAFETY APPLIANCES COMPANY

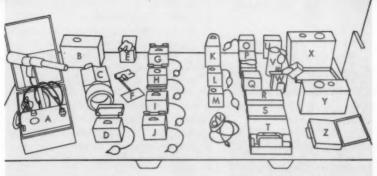
Pittsburgh 8, Pennsylvania



Every day-in many ways-MSA products safeguard millions of lives

# FULL LINE SELECTION





M-S-A Electrostatic Sampler
M-S-A Midget Impinger
M-S-A Fist-Flo Air Sampler
M-S-A Fist-Flo Air Sampler
M-S-A Portable Oxygen Indicator
M-S-A Sonskescope
M-S-A Casella Cossade Impactor
M-S-A Gascope
M-S-A Model 40 Combustible Gas Indicator
M-S-A Model 20 Explosimeter
M-S-A Model 2 Explosimeter
M-S-A Model 2 Explosimeter
M-S-A Model 2 Explosimeter
M-S-A A Hydroan Ester, Type M-6
M-S-A Lybrandit Hydrocarban Detector
M-S-A Arsine Detector Kit
M-S-A Chromic Acid Mist Detector
M-S-A Hydrocyanic Gas Detector
M-S-A Hydrogen Sulphide Detector
M-S-A Hydrogen Sulphide Detector
M-S-A Hydrogen Sulphide Detector
M-S-A Copton Monaide Indicator
M-S-A CO Poisoning Test Kit A.B.C.D.E.F.G.H.L.J.K.L.M.N.O.P.Q.R.S.T.U.V.W.X.Y.Z.

# SHOW ME

"Show me how an engineered cord set can...

- improve product appearance
- cut assembly costs
- increase customer satisfaction
- multiply trademark mileage

for the same — OR LESS — money than I'm spending now!"

Miller Electric can show you hard-working cord sets that give you these advantages — and more. Imaginative design, the industry's broadest line of stock cord set components, plus our complete engineering service for problem applications.



SEE FOR YOURSELF WRITE FOR CATALOG P 1



MILLER ELECTRIC CO.

120 Main St., Pawtucket, Rhode Island
For More Information Write No. 239 on Place Mark Card—Page 32



#### **Products**

#### Automatic Leveler Needs No Auxiliary Power



An automatic dock leveler eliminates the need for auxiliary hydraulic or electrical power. Platform assembly is spring counter-balanced and features a unique brake and release arrangement that is actuated at floor level by the operator. It accommodates all normal truck bed heights ranging from 30 in. above to 11 in. below dock level. In stored position, leveler fits itself into exact shape of dock so no dock space is wasted. Unit requires only four anchor bolts and fits in 24 in. pit. Wayne Pump Co., Div. of Symington Wayne Corp., Fort Wayne, Ind.

Write No. 44 on Place Mark Card—Page 32

#### Battery-powered Magnet Handles 8000 Lbs.



A battery-powered lift magnet has a maximum lift capacity of 8000 lbs. Completely self-contained unit is powered by automatic wet cell batteries within the magnet case. It can be used anywhere because length of haul is not restricted by electrical cords. Remote control is available, and magnet easily handles odd-shaped parts which are difficult to lift with sling or hook. Dial ammeter indicates when recharging is necessary. Sundstrand-American Broach, Div. of Sundstrand Corp., Ann Arbor,

Write No. 45 on Place Mark Card-Page 32



#### 4 ways to cut the cost of high-conductivity parts

There are now four free-cutting, high-conductivity Anaconda coppers that broaden the combinations of mechanical, physical, and fabricating properties available for boosting production and cutting costs of high-conductivity parts. They are furnished chiefly in rod and bar, but are available also as extruded shapes and, except for the leaded coppers, die-pressed forgings of simple design. All have good cold-working properties.

Leaded Copper-126 and Deoxidized Leaded Copper-129 have slightly higher electrical conductivity—98% IACS annealed, 95% IACS, minimum. The difference between them is that Alloy 129, being deoxidized, is not subject to hydrogen embrittlement when annealed or furnace-brazed in reducing atmospheres. Neither leaded alloy is recommended for hot working.

Tellurium Copper-127 and OFHC Sulfur Copper have an electrical conductivity rating of 95% IACS annealed, 90% minimum. Both may be extensively hot worked

and neither is subject to hydrogen embrittlement. Tellurium Copper-127 has the advantage of retaining its mechanical properties at temperatures higher than those tolerated by the other free-cutting coppers—and hence is widely used in the welding and cutting-tip field.

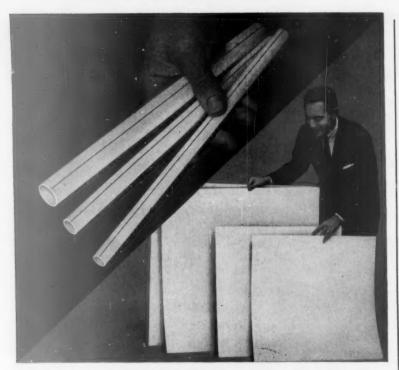
The free-cutting coppers may be machined at cutting speeds approaching those used for machining Free-Cutting Brass. For Tellurium Copper-127, however, carbide-tipped tools are recommended as the inherent copper telluride particles cause somewhat greater tool wear.

#### ANACONDA

FREE-CUTTING HIGH-CONDUCTIVITY
COPPER PRODUCTS

Made by The American Brass Company

For More Information Write No. 241 on Place Mark Card-Page 32



Color-coded thin-wall "Teflon" tubing, skived tape in 13 colors, bondable "Teflon" specialties—they're all part of the full R/M "Teflon" line available to simplify your purchasing through one large, reliable source.

# TEFLON: Where to get it fast

No need to restate the unique combination of electrical, chemical and physical properties of "Teflon."\* You know that for many applications calling for high dielectric strength and/or resistance to chemicals and high temperatures, there simply is no substitute.

Big questions in your mind, then, are where to get "Teflon" fast and who can best meet your specs.

On both counts, the answer is R/M. A pioneer in the processing of "Teflon" into sheets, rods, tubes, tape and

machined parts, R/M offers you a complete "Teflon" service—a service that can help assure you optimum performance and reliability of critical components, plus prompt delivery in production quantities according to your schedule.

It will pay you to talk "Tetlon" with R/M. Call the nearest R/M district office (listed below) or write Plastic Products Division, Raybestos-Manhattan, Inc., Manheim, Pa.

\*Du Pont trademark for its TFE-fluorocarbon resin

# RM

### RAYBESTOS-MANHATTAN, INC.

Manheim, Pa.

BIRMINGHAM 1 • CHICAGO 31 • CLEVELAND 16 • DALLAS 25 • DENVER 16 • DETROIT 2 HOUSTON 1 • LOS ANGELES 35 • MINNEAPOLIS 16 • NEW ORLEANS 17 • PASSAIC • PHILADELPHIA 3 PITTSBURGH 22 • SAM FRANCISCO 5 • SEATTLE 4 • PETEROROUGH, ONTARIO, CANADO

SPECIALISTS IN ASBESTOS, RUBBER, SINTERED METAL, ENGINEERED PLASTICS

For More Information Write No. 242 on Place Mark Card-Page 32

#### **Products**

#### **Drill Speeder Boosts Turret Lathe Output**



A drill speeder which provides accurate, high-speed drilling for both ram and saddle-type machines can boost productivity for turret lathe users. Its capacity for tool steel is 1/2 in. drill, No. 2 Morse taper. Unit uses 3/4 hp 3-phase 220/440 V. motor and has four speeds. Two different speed combinations are optional: either 340, 510, 625 and 945 rpm, or 530, 865, 1045 and 1615 rpm. Sturdiness is outstanding feature, and mounting is quick and easy. Another advantage is short overhang; drill speeder takes up only 41/2 in. from face of turret to end of spindle. Ward-Riddle Co., 241 Myrtle St., Ravenna, Ohio.

Write No. 46 on Place Mark Card-Page 32

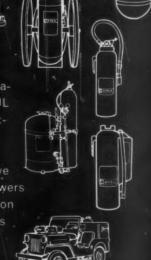


"Let's forget it, Phil. We were both wrong—especially you."

For More Information about ad on facing page Write No. 243 on Place Mark Card—pg. 32→ PURCHASING



257 of the 500 largest U.S. corporations rely on ANSUL for basic fire protection. Thousands of other companies, large and small, have found the right answers to their fire protection problems in Ansul's complete line of fire extinguishing



Control of the contro

ANSUL Returns

0



# FAN-COOLED



- High load carrying capacity
- Super-efficient 2-way cooling for higher thermal ratings
- Unlimited mounting positions
- Automatic and positive lubrication
  - ► IN STOCK for immediate delivery



- 12 sizes—Center Distances from 11/4" to 8"
- Rated to NEW AGMA Standards
- Ratios from 5:1 to 70:1
- Output torque to 46,000 lb. in.
- Input capacities from .01 to 66 HP

Foote Bros. RADICON Worm Gear Reducers incorporate totally new concepts of speed reducer design and construction. From the inside out and top to bottom, they embody years ahead thinking to provide users with more efficient, more versatile right angle power transmission in minimum size units.

Gear accuracy and surface finish, bearing and shaft design, positive lubrication, extreme efficiency controlled cooling, the selection of materials and precision manufacturing techniques—all reflect careful attention to detail that results in higher load carrying capacity and maximum service life.

These outstanding new fan-cooled worm gear reducers are available now—carried IN STOCK by Authorized Foote Bros. Distributors for IMME-DIATE DELIVERY. See them soon. Get complete details on the performance, versatility, and service life they will bring you. Write for RADICON Catalog.

#### UNLIMITED MOUNTING POSITIONS





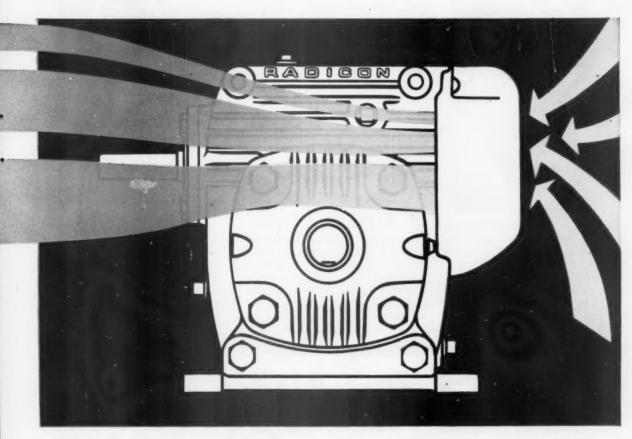








### COMPLETELY NEW and ADVANCED line of WORM GEAR REDUCERS



#### RADICON Reducers operate in a STREAM OF AIR for maximum thermal efficiency

Advanced design of RADICON Worm Gear Reducers and their high efficiency radiation and convection cooling for controlled transfer of heat to the outside air, permit *identical* thermal and mechanical ratings in most cases. For infrequent or intermittent service, thermal ratings can be ignored.

A moving stream of air, induced by the maximum diameter fan, forcing high velocity cooling air along horizontal channels formed by the external ribbing, dissipates radiated heat to hold the Reducer's temperature rise to a minimum. Cooling is equally efficient at any mounting position.





#### GEAR AND MACHINE CORPORATION

4581 South Western Boulevard, Chicago 9, Illinois

**POWER TRANSMISSION DRIVES** 













For More Information Write No. 244 on Place Mark Card-Page 32

#### **Products**

Easy-to-Apply
Epoxy Resin Adhesive



A high-strength one-component modified epoxy resin adhesive provides easy application techniques and unlimited working life for bonding high volume metal and plastic structural assemblies. Adhesive contains a latent hardener which eliminates need of

weighing and mixing hardener with base resin at time of use, but it will not harden before curing operations are performed. It provides metal-to-metal bonds with shear strengths of 2500 psi at 75 degrees F and maintains high strength over service temperature range of minus 67 degrees F to plus 300 degrees F. Self-filleting quality makes it excellent for honeycomb sandwich construction. Adhesives, Coatings and Sealers Div., Minnesota Mining and Mfg. Co., 900 Bush Ave., St. Paul 6, Minn.

Write No. 47 on Place Mark Card-Page 32

#### Combined pH Meter and Strip Chart Recorder

A combined pH meter and strip chart recorder costs less than many conventional pH meters alone. Unit provides continuous permanent record of pH changes at low cost. Strip chart recorder contains 63 ft. roll of chart paper that will last 31 days at 1 in. per hour. Other chart speeds up to 16 in. per hour can be had by

simple gear change. Electronically modulated amplifier which compensates for line voltage fluctuations uses standard radio



tubes. Switch on front panel permits disconnection of chart drive so instrument becomes indicating pH meter. Analytical Measurements, Inc., 585 Main St., Chatham, N.J.

Write No. 48 on Place Mark Card-Page 32

#### **Preservative Paint Conducts Electricity**

A new paint preservative has been developed and adopted for all Super standard single point carbide tools. Change eliminates

(Please turn to page 152)



for prompt, safe delivery

ROADWAY.

linking you with your suppliers throughout the industrial centers of the nation

# SPECIFY ROADWAY ON FULL TRUCK AND LTL SHIPMENTS

for data on Roadway service to your area, call your nearest Roadway terminal, or write:

ROADWAY EXPRESS, INC.

For More Information Write No. 245 on Place Mark Card-Page 32



For More Information about ad on facing page Write No. 246 on Place Mark Card—pg. 32-> Purchasing



Drive a real bargain!

New SKIL Positive Clutch Drivers . . . today's lowest price, full-size assembly tools

At \$42.50 for the straight drive Model 139 and \$49.50 for the reversing Model 140, these new Skil drivers make most hand assembly an extravagance. You get faster, more uniform fittings with far fewer rejects—and all at lower production costs, compared with hand driving.

The powerful positive clutch delivers plenty of tightening torque for every job from light to heavy production assembly in wood, metal and other materials. In fact, the extreme low cost of these drivers makes them perfect wherever power fastening can speed up work and lower costs. Capacity: No. 10 wood and self-tapping screws; No. 12 machine screws and nuts.

Ask your Skil distributor for a demonstration right away. He's listed in the Yellow Pages under "Tools-Electric." Or write for new assembly tool catalog, Skil Corporation, 5033 Elston Avenue, Chicago 30, Illinois, Dept. 125G.



Both models have trigger switch, pin for locking in "on" position. Model 140 has reversing switch on top for disassembly work.



... and SKILSAW POWER TOOLS

#### Products

(Continued from page 150)

use of ordinary lacquer paint which acted as insulator in electrolytic grinding process Metallic preservative finish provides better conduction in the electrolytic process for grinding this type of tool, helping to conduct the electrical current and improving the grinding process even in comparison to non-painted tools. Super Tool Co., 21652 Hoover Rd., Detroit 13, Mich.

Write No. 49 on Place Mark Card-Page 32

#### Panelboards Combine Lighting, Power Loads



Power loads can now be combined in same panelboard with lighting and appliance circuits. Re-rated line of panelboards features plug-in construction for onthe-job assembly. Factory assembled units are also available. Basic devices come with main lug ratings up to 600 amperes, and plug-in branch circuit breakers are offered in one, two or three-pole construction with ratings from 15 to 100 amperes. Square D Co., 1601 Mercer Rd., Lexington, Ky.

Write No. 50 on Place Mark Card-Page 32

#### Coolant Unit Permits Full Work Visibility

A mist coolant unit brings a stream of coolant right to the cutting or grinding edge of any machine tool to give cool, clean machining with full-time work visibility. Self-contained unit has air-trap chamber and pressurized reservoir extruded from transparent Tenite butyrate plastic,

which resists deterioration by coolants and oils. One unit can serve ten or more jets. Built-in solenoid valve, which is connected



to machine circuit, starts unit when machine is turned on. Bijur Lubricating Corp., Rochelle Park, N.J.

Write No. 51 on Place Mark Card-Page 32

#### Extended Surface Air Filters



An extended surface air filter has total effective filtering area four times that of fiber glass throw-away filters and far greater dust arrestance than ordinary viscous coated filters. Under influence of air stream, 2 in. high pleats which are set on 11/4 in. centers become parabolic shaped pockets for high efficiency dirt entrapment. Unit comes in all 2 in. standard sizes and will fit all types of filter banks; no expensive "cages," "baskets" or other supporting devices needed. Arco Mfg. Corp., 542 W. 55th St., New York 19, N.Y.

Write No. 52 on Place Mark Card-Page 32

FOR PLACE MARK CARD TURN TO PAGE 32



### consistent quality

Consistent Quality stainless steel takes the guesswork out of any production operation. Tooling set-ups become standard. Rejects and reworking are reduced. Your plant and your product move smoothly.

J&L consistent quality stainless steel is as near as your telephone . . .

#### Call Western Union by number, ask for Operator 25

Western Union Operator 25 will give you the name of your nearest J&L stainless steel distributor. You'll find that he can further reduce your costs of using stainless steel by providing a complete selection of materials. He can save you the capital investment required to maintain long term inventories. He can provide a wide variety of preproduction services, and reduce your overhead for stocking, handling, accounting and obsolescence.

Your J&L distributor can provide you with the consistent quality stainless steel you need, as you need it, when you need it. He can serve you better because J&L serves him better. J&L's own staff of technical specialists and metallurgists are at the call of your J&L distributor to give you the technical assistance, even advanced research, you may need.

For better production and better service, call your J&L distributor—call Western Union Operator 25, today.

J&L-a leading producer of stainless steel and precision cold rolled strip steels.



#### **STAINLESS**

SHEET . STRIP . BAR . WIRE

For More Information Write No. 247 on Place Mark Card—Page 32

PURCHASING

consistent quality production depends on consistent quality stainless



Call Western Union by number – ask for Operator 25 for the nearest source of Consistent Quality Jal Stainless Steel

Jones & Laughlin Steel Corporation . STAINLESS and STRIP DIVISION . DETROIT 34



Delta Air Lines uses Polyken paper tapes routinely in aircraft maintenance

# Delta, too, sticks with Polyken

More and more big companies are taking advantage of the new Polyken paper tape line

Seen your Polyken representative lately? A lot's been happening. That famous Polyken quality, so highly popular and widely proven in plastic and cloth tapes, is now available in paper tapes.

#### Masking, sealing, bundling, packaging

You get a perfect combination of the right backing and proper adhesive. The result: Polyken paper tapes are a real pleasure to work with.

#### Conforms neatly, removes cleanly

The tape takes hold at a touch. Removal is smooth, residue-free. Handles easily. Resists both moisture and paint solvent.

Name the need—let your Polyken man provide the specifications and special attention. He's one of the industry's best trained technicians in the use and application of industrial tapes.



Check with your nearest Polyken Industrial Tape Distributor. Look in the phone book under "Tapes", or write to Polyken Sales Division, 309 W. Jackson Blvd., Chicago 6, Ill. (In Canada, write Polyken, Curity Ave., Toronto.)

### Polyken

INDUSTRIAL TAPES

THE KENDALL COMPANY
Polyken Sales Division

For More Information Write No. 248 on Place Mark Card-Page 32

#### POLYKEN DISTRIBUTORS

ARKANSAS Little Rock. Arkansas Paper Co. Pine Bluff. Smith Paper Products Co.	OmahaNogg Bros. Paper Co
Pine BluffSmith Paper Products Co.	NEW JERSEY
Pine Bluff Smith Paper Products Co.  CALFORNIA Emeryullis Zellerbach Paper Co. Fresno Zellerbach Paper Co. Hawthorne American Latex Products Coro. Highland Richmond Paper Co. Hollywood Reese Supply Co. Inc. Los Angeles Fillmore A Garbar Los Angeles Fillmore A Garbar Los Angeles Kent N. Landsberg Co. Inc. Los Angeles Western Fibrous Glass Products Los Angeles Wilson Paper Co. Los Angeles Zellerbach Paper Co. National City Zellerbach Paper Co. National City Zellerbach Paper Co. San Francisco Gilmore Steel & Supply Co. San Francisco C. J. Hendry Co. San Francisco Western Fibrous Glass Products San Francisco COLORADO	NEW JERSEY Clifton Raiph E. Baker Co Elizabeth Hand Hardware Englewood Coronet Paper Corp Hoboken D. S. MacCorkle, Inc. Newark Abco Plastic & Supply Co Newark Herbert A. Poat, Inc. Paterson Theodore R. Levine & Son Ridgefield George H. Swetsel Trenton Pack & Seal, Inc.
Hollywood Reese Supply Co. Inc. Los Angeles Fillmore & Garbar Los Angeles L A Supply Co.	Newark Herbert A. Post, Inc Paterson Theodore R. Levine & Son Ridgefield George H. Swatel
Los Angeles Noland Paper Co. Inc.	TrentonPack & Seal, Inc
Los Angeles Western Fibrous Glass Products Los Angeles Wilson Paper Co.	AlbuquerqueEquipment Sales 4 Mfg. Co
National CityZellerbach Paper Co. Oakland Harry P. Robarts Co.	Astoria, L. I
Sacramento Zellerbach Paper Co. San Diego Buel-Town Co.	Buffalo Presque Isle Paper Producte Buffalo Union Paper 4 Twine Co
San Francisco	Cohoes
San Francisco . Western Fibrous Glass Products San Francisco Zellerbach Paper Co.	Elmira
COLORADO	Long Island City Viking-Criterion Paper Corp New York Coy Disbrow, Div. of Pohlman Co., Inc
COLORADO Denver Emblem Tape & Label Co. Denver Katzke Bros. Paper Co. Denver Union Supply Co. Inc.	Astoria, L. L. Herbert A. Post, Inc Buffalo Herbert A. Post, Inc Buffalo Herbert A. Post, Inc Buffalo Preque late Paper Product Buffalo Preque late Paper Product Buffalo Union Paper & Twine Co Cohoes Sheemaker Paper Co Garden City, L. L. Hogan Industrial Supply Corp Elmics Heights The Welles Supply Co Jamaica Paper Corp New York Coy Diebrow, Div. of Pohlman Co., Inc New York Geo. W. Milliar & Co., Inc New York Geo. W. Milliar & Co. Mew York Herbert Co. Mew York Geo. W. Milliar & Co. Mew York Geo. W. Milliar & Co. Mew York Geo. W. Milliar & Co. Mew York Geo. W. Washing & Geo. W. Milliar & Co. Mew York Geo. W. Washing & Geo. W. Milliar & Co. Mew York Geo. W. Washing & Geo. W. Milliar & Co. Mew York Geo. W. Washing & Geo. W. Milliar & Co. Mew York Geo. W. Washing & Geo. W. Milliar & Co. Mew York Geo. W. Washing & Geo. W. Milliar & Co. Mew York Geo. W. Washing & Geo. W. Milliar & Co. Milliar & Co. Mew York Geo. W. Washing & Geo. W. Milliar & Co. Milliar & Co. Mew York Geo. W. Washing & Geo. W. Milliar & Co. Milli
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New Britain	CharlotteDillard Paper Co
Bridgeport. Equity Paper Co. Bridgeport. Lott-Merlin, inc. Bridgeport. Rourke-Eno Paper Co. Hartford. Rourke-Eno Paper Co. Hew Britain. Mill Supplies, inc. New Haven. The Chatfield Paper Co. Stamford. Lott-Merlin, inc.	Charlotte NORTH CAROLINA Charlotte Dillard Paper Co Greensboro Dillard Paper Co Raleigh Dillard Paper Co
FLORIDA JacksonvilleSperry Packaging & Distributing MiamiGondas Corporation TampaIndustrial Supply Corp.	Cincinnati, The Chatfield Paper Corp Cleveland The Central Ohio Paper Cor Cleveland Gascon Paper Cor Cleveland Union Paper 4 Twine Co Columbus The Cincinnati Cordage 4 Paper Co Dayton Reliable Rubber Products Co Hubbard Federal Wholesale Co Toledo The Ohio & Michigan Paper Co Youngstown The Hearn Paper Co
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MaconDillard Paper Co.	OKLAHOMA
Chicago Abana Products Inc. Chicago Paper Co.	Oklahoma City
Chicage Abana Products Inc. Chicage Chicage Paper Co. Chicage Chicage Paper Co. Chicage Chicage Paper Co. Chicage Durable Products Chicage Inlander-Steinfeler Paper Co. Chicage Schwarz Paper Co. Peorlis Schwarz Paper Co.	Oklahoma City C. B. Anderson Co Oklahoma City Service Supply, Inc. Tulsa C. B. Anderson Electric Co Tulsa Industrial Equipment Co Tulsa Tulsa Paper Co
Chicago Schwarz Paper Co. Peorla Schwarz Paper Co.	Portland Western Fibrous Glass Product Portland General Rubber & Supply Co
Ft. Wayne Allen Steel & Supply Co.	PENNSYLVANIA Hershey
Peorla	Hershey PENNSYLVANIA Hershey Paper Co Johnstown Hershey Paper Co Lancaster United Twine & Paper Co Philadelphia The J. I. N. Smythe Co Philadelphia Frank W. Winne & Son, inc Philadelphia Frank W. Winne & Son, inc Pittsburgh Interstate Cordage & Paper Co Pittsburgh Morrie Paper Co Pittsburgh Stan-Ton Springfield The Baeod Co
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Davenport Peterson Paper Co. Sioux City Carpenter Paper Co. Waterloo Waterloo Paper Co.	
WichitaSouthwest Paper Co.	ProvidenceNarragansett Paper Co
KENTUCKY LouisvilleSoutheastern Paper Co.	GreenvilleDillard Paper Co
	Knoxville Dillard Paper Co
New Orleans Stevens-Band Paper Co. Shreveport Louisiana Paper Co., Ltd.	Knoxville Dillard Paper Co Knoxville The Cincinnati Cordage & Paper Co Memphis Mayer Myers Paper Co Nashville Clements Paper Co
BaltimoreF. W. Winne & Son, inc.	TEXAS Dallas Airsco Rubber Prod. of Dallas, Inc. El Paso Field Parker Co Grand Prairie C. P. Weggoner Slace Co., Inc. Houston Frank W. Winne & Son, Inc.
Boston Andrews Paper Co.	Grand Prairie C. P. Waggoner Sales Co., Inc Houston Frank W. Winne & Son, Inc
Springfield Carter Paper Co.	
Boaton Andrews Paper Co. Cambridge H. J. Dowd Co., Inc. Springfield Carter Paper Co. Springfield, Rourke-Eno Paper Co., Inc. Worcester The J. C. Campbell Paper Co. of Worcester	Salt Lake City. American Paper & Supply Co Salt Lake City. Equipment Supply Co Salt Lake City. Great Western Supply Co Salt Lake City. J. B. Tile Co
Battle Creek	Bristol Dillard Paper Co
Battle Creek Cortright Paper Co. Detroit F. W. Winne & Son Inc. Grand Rapids Grand Rapids Paper Co. Jackson Crown Paper & Bag Co. Lansing Cathey Company	Bristol VIRGINIA  Norfolk Empire Machinery & Supply Co Norfolk J. Henry Holland Core Richmond Industrial Supply Core Roanoke Dillard Paper Co
MuskegonSteindler Paper Co.	WARMINGTON
MINNESOTA MinneapolisMartin F. Falk Paper Co. DuluthMartin F. Falk Paper Co.	Seattle. Western Fibrous Glass Product Spokane. Zellerbach Paper Co WISCONSIN
Joplin Joplin Paper Co.  Kansas City Bossert Company  Kansas City Wertgame Paper Co.	
doplin Apper Co. Kansas City Bossert Company Kansas City Wertgame Paper Co. Kirkwood Industrial Ideas St. Louis Rober Products Corp.	Appieron Universal reper Co- Madison Schwarz Paper Co- Milwaukee Red-Products Compan Milwaukee Rediable Paper Co., In Noensh Sawyer Paper Co.
MONTANA	HAWAII
BillingsWinter Hardware Co.	Honolulu

# Polyken<sup>®</sup>

#### **Products**

#### Low-Cost Ball Bearing Pulleys



Low-cost ball bearing pulleys for use with rope, wire rope or cable come in six standard sizes. Pulleys handle cable sizes up to 1/4 in. diameter. O.D's range from % to 2 in. and bores from 3/16 to 3/8 in. Bearing rings of case hardened steel provide high load capacity and cable groove wear resistance. Precision steel balls, operate in unground raceways, provide free turning at low cost. Units are cadmium plated for corrosion resistance. Tempered and rounded grooves and low bearing friction ensure minimum cable slippage and groove wear. Syracuse Bearing Co., 428 E. Jefferson St., Syracuse, N.Y. Write No. 53 on Place Mark Card-Page 32

#### All-Purpose Cleaner in Concentrated Form



An all-purpose cleaner is packed in plastic bags and shipped in 99.7% concentration, cutting freight charges and storage space. Each package holds a measured amount of base which makes a gallon of concentrated cleaner when mixed with water. Concentrate in turn makes 30 to 40 gals. of cleaning solution. Cleaner can be stored until needed and is not affected by heat or cold. Scaletty-Corydon Co., 2649 Lyndale Ave. S., Mirmeapolis, Minn.

Write No. 54 on Place Mark Card—Page 32
For More Information about ad on following page
Write No. 249 on Place Mark Card—page 32->



Roy Lindeman, Purchasing Agent, and Al Krannich, Assistant Chief Engineer, of the Burt Manufacturing Company, Akron, Ohio, discuss Westinghouse products as applied to Burt fan ventilator equipment with R. R. Burke, Salesman for Moock Electric Supply Co., Akron.



YOUR WESTINGHOUSE DISTRIBUTOR SALESMAN-

# His training and experience can save you money and man-hours

A firsthand tour of your plant by a Westinghouse distributor can often bring on-thespot, money-saving suggestions.

Frequently, your Westinghouse distributor can suggest new, improved products or offer advice on product applications. He may even suggest the use of a standard Westinghouse product to fit your "custom" installation, helping you ring up solid savings in money and man-hours.

Your Westinghouse distributor sees many

electrical systems. He's in an excellent position to observe new Westinghouse products and techniques at work . . . and give you the benefit of his experience.

He will help you get the fastest delivery possible on electrical equipment you urgently need . . . or he will schedule delivery to suit your modernization or replacement plans.

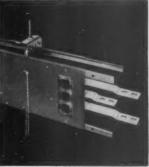
Your Westinghouse distributor is ready with the most valuable product he can offer you . . . SERVICE.

J-94140

#### YOU CAN BE SURE ... IF IT'S Westinghouse

TUNE IN WESTINGHOUSE-CBS TV-RADIO COVERAGE, PRESIDENTIAL CONVENTIONS, JULY 10-29

Here are three of the 17,000 items handled by your Westinghouse distributor:



Compact, lightweight, efficient Westinghouse bus duct installs fast and at low cost. Extreme flexibility speeds future expansion or plant layout changes. Available from your distributor to meet secondary power distribution needs.



Westinghouse capacitors improve power factor. Indoor dustproof capacitors seal out dust and lint, and guard against contact with live parts. Comply with NEC requirements. Your distributor can supply Westinghouse capacitors to fill any industrial application.



Economical Westinghouse CSO industrial luminaire uses superhigh output fluorescent lamps. Unique "chimney" construction dissipates heat, creates updraft to keep unit clean, provides 20% uplight for visual comfort.

"Watch for the Westinghouse Industrial Apparatus Caravan"





CEAR PERFORMANCE to match the ever-increasing power and speed of modern machines is a Fairfield specialty. This is possible because Fairfield has long held a position of leadership in utilizing the most advanced methods, equipment, and techniques for producing better gears. By keeping apace with modern engineering trends, Fairfield renders an invaluable service to many of the nation's leading machinery builders.

If you have a gear problem, check with Fairfield. Our engineers are well-qualified to give you expert recommendations. CALL OR WRITE.

SPUR GEARS—Straight, helical, and internal. Sizes from 16 pitch, 1½" dia., to 1½ pitch, 36" dia.

HERRINGBONE—(Fellows Type). Sizes from 11/2" to 15"

SPIRAL BEVEL—Sizes from 16 pitch, 1½" dia., to 1½ pitch, 28" dia.

STRAIGHT BEVEL—Sizes from 16 pitch, 1½" dia., to 1½ pitch, 28" dia.

HYPOID-Sizes from 11/2" to 28" dia.

ZEROL-Sizes from 16 pitch, 1½" dia., to 1½ pitch, 21" dia.

WORMS AND WORM GEARS—Worms to 7" dia. Worm gears to 36" dia.

SPLINED SHAFTS - Lengths to 72".

DIFFERENTIALS — 3,000 to 500,000 inch pounds capacity.

Note: All of the sizes above are approximate.



Gears and Differentials Made to Order for:

TRACTORS . HEAVY DUTY TRUCKS . AGRICULTURAL MACHINERY . POWER SHOVELS AND CRANES
MINING MACHINES . BOAD GRADERS . BUSES . STREET SWEEDERS . INDUSTRIAL LIST TRUCKS

TRACTORS • MEAVY DUTY TRUCKS • AGRICULTURAL MACHINERY • POWER SHOVELS AND CRANES
MINING MACHINES • ROAD GRADERS • BUSES • STREET SWEEPERS • INDUSTRIAL LIFT TRUCKS
For More Information Write No. 250 on Place Mark Card—Page 32

#### **Products**

#### Line of Ultra-Compact Packaged Substations



A line of ultra-compact, packaged electrical substations slash size by as much as 53% and floor area by as much as 40%. Units combine high- and low-voltage control and protection equipment with a dry type power transformer in a single, integrated assembly. They are available in ratings from 75 through 500 kva. Dimensions for all ratings are 75 in. long, 38 in. deep, 70 in. high. I-T-E Circuit Breaker Co., 1900 Hamilton St., Philadelphia 30, Pa. Write No. 55 on Place Mark Card—Page 32

#### Extra-Large Plastic Drum Faucet



A 2 in. polyethylene drum faucet will empty a 55 gal. drum of average material in a little over two minutes at full flow. Of similar design to popular ¾ in. faucet, it easily handles viscous materials and is excellent where rapid drawing of liquids from drum containers is essential. Instant flow is obtained by half-turn

(Please turn to page 162)





# To the purchasing agent who must decide about ALUMINUM CONDUIT

How one p.a. and one hacksaw blade cut the cost of installing 40,000 feet of conduit

The man who purchased this conduit knew he would save money—on initial cost, on handling and installing—but, when only one hacksaw blade was required to install all 40,000 feet, this economy became real and obvious.

Alcoa aluminum conduit cuts easier, threads easier, bends easier than steel conduit.

And it weighs about  $\frac{1}{3}$  as much. A 10-foot length of Alcoa 4" aluminum conduit weighs only 34 pounds, compared to 98 pounds for steel.

Immediate savings. Compare first-price cost with that of steel conduit and you'll see how favorably Alcoa aluminum conduit stacks up. When you consider other costs—cutting, bending, threading and installing—you'll see why aluminum is now specified for more plant installations than ever before.

Long-term economy. Once installed, Alcoa conduit goes on saving you money. It's corrosion-resistant, nontoxic, nonstaining, and keeps its good appearance through the years with only routine care.

See for yourself. Heft a length of Alcoa conduit, and you'll see how important it is to consider aluminum for your next conduit order. Ask one of our representatives for a free sample . . . or a copy of the 12-page booklet "Alcoa Aluminum Electrical Rigid Conduit." Or write to Rome Cable Division of Alcoa, Department 14-70, Rome, New York.

#### NOW YOU CAN GET ALL 4 FROM ROME



Copper wire and cable



Aluminum wire and cable



Aluminum conduit



Aluminum bus conductor

ROME CABLE DIVISION OF ALCOA



# Jomac gloves stand up under treatment that even expensive leather gloves couldn't take!

The test shown above, in which a razor blade is drawn sharply across a Jomac glove without ill effect, shows the remarkable cut resistance of Jomac's loop-pile fabric . . . protection that even leather doesn't afford.

Moreover, Jomac gloves wear longer than leather gloves and provide a better grip on oily surfaces. And most Jomacs—like the HR gloves shown above—are reversible...so any two make a pair, any pair gives you four working surfaces.

Write today for free literature. Describe working conditions and materials handled: we'll make specific recommendations.

Jomac also makes a complete line of North PVC-coated gloves

# JOMAC INDUSTRIAL GLOVES

JOMAC INC., DEPT. F, PHILADELPHIA 38, PA.

For More Information Write No. 253 on Place Mark Card-Page 32

#### **Products**

(Continued from page 158)

of handle, and patented vertical ribs inside spout eliminate spit. Overall length is 6 in. in closed position, and weight is 9 oz. Polyethylene spout closure eliminates residual drippage. Multi-Meter Corp., 1635 Coining Dr., P.O. Box 6594, Toledo 12, Ohio.

Write No. 56 on Place Mark Card-Page 32

#### Hand Tool Removes Carton Staples



A hand tool which is specifically designed for removing staples and stitches from cartons is constructed of heavy-duty die cast zinc with steel welded tip. Tool eliminates injury from ragged staples which stick out when cartons are pried apart. Slight movement of hand will pry out stitch immediately, and tool is small enough to be carried in pocket. Flash Manufacturing Co., 169 Murray St., Newark, 5, N.J.

Write No. 57 on Place Mark Card-Page 32



"I work with 5000 suppliers, what'ya mean, guess who?"

# A fable for rabbits

(and others)

nce, deep in the forest, there
lived an industrious Beaver. He
not only felled trees and built dams,
but, on the land he cleared, he grew
produce for a hungry family of rabbits.

How they loved his fat, juicy carrots!





But one day Father Rabbit found that by crossing over the river on a fallen tree he could buy carrots more cheaply from a Raccoon who lived on the other side. Soon he was racing back and forth across the river. The Beaver shrugged his shoulders and went into the dry goods business.

Then came a terrible flood. The fallen tree was swept away, and the rabbits could only huddle on the bank and gaze longingly across the river.

They went back to the Beaver, who said, "Sorry, folks,

but I'm out of the carrot business. Could you use a dozen hand towels?"

One cold day Mr. Beaver met Father Rabbit foraging for food.

The Rabbit was near starvation. He looked at the Beaver with tears in his eyes and wailed, "Where were you when I needed you?"

And the Beaver replied, "Where were you when I needed you?"

Whether your needs be carrots or steel, your safest, most reliable suppliers are right here at home. No one knows the needs of American steel buyers better than American steel makers. To serve you, and serve you well, is our primary concern—not just today and tomorrow—but year after year.

For quality steel of certified analysis, meeting appropriate specifications, you can rely on Bethlehem Steel for such products as reinforcing bars, wire and wire products, pipe, structural shapes, plates, carbon bars . . . hot-rolled, cold-rolled, and galvanized sheets . . . transmission towers and other fabricated steel, wire rope, and industrial fasteners.

And remember, our engineers are on call to help you solve your steel-working problems.



#### BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.



For More Information Write No. 254 on Place Mark Card-Page 32

For More Information about ad on following page Write No. 255 on Place Mark Card—pg. 32→



# Walt Parker, who can duplicate and study virtually every pulping problem in a specially equipped laboratory, says

you'll like doing business with Columbia-Southern

In the Pulp Laboratory at Columbia-Southern's Barberton, Ohio, Research Center, Walt Parker and his colleagues set up the full range of chemical situations encountered in commercial pulp mills. Thus they can study at first hand any particular questions important to mills using Columbia-Southern chemicals. Evaluation of customer formulations and methods have led to major savings and boosts in efficiency for a large number of pulp and paper producers.

When analyzing customer problems, the Pulp Laboratory engineers work closely with customer technical personnel, carefully checking every step along the way. This relationship insures *practical* results when the findings of the laboratory are put into operation in the customer's mill.

Concern that customers are getting the most efficient use of Columbia-Southern products is a principle followed throughout all departments. It is very evident in the regular activity of the Technical Service Engineers, for example, who provide consultation on unloading, storing, and handling potentially dangerous chemicals such as chlorine and caustic—to mention just one area of Technical Service responsibility.

Customer-oriented concern all along the line explains why so many leading organizations, representing all manufacturing industries, rely on Columbia-Southern for their basic chemical needs.

Anhydrous Ammonia, Barium Chemicals, Benzene Hexachloride, Calcium Chloride, Calcium Hypochlorite (Pittchlor®, Pittabs®), Carbon Tetrachloride, Caustic Potash, Caustic Soda, Chlorine, Chlorinated Benzenes, Chloro IPC, Chrome Chemicals, Hydrogen Peroxide, Muriatic Acid, Pacific Crystals, Perchlorethylene, Rubber Pigments (Calcene®, Hi-Sil®, Silene®), Soda Ash, Sodium Bicarbonate, Sodium Sulfate, Titanium Tetrachloride, Trichlorethylene

# columbia southern chemicals

COLUMBIA-SOUTHERN CHEMICAL CORPORATION • A Subsidiary of Pittsburgh Plate Glass Company • One Gateway Center, Pittsburgh 22, Pa.

# Filing Shortcuts Can Reduce Costs, Aid Efficiency

GOOD FILING procedures must include more than a cabinet with a set of folders in alphabetical order. Papers put away in purchasing department files must be ready for use quickly, space and equipment must be conserved, and safekeeping of important documents must be assured.

Attention to a few basic details will eliminate the possibility of a haphazard filing system. If you can find the right paper instantly, you can make large savings for your company.

Check your own filing procedures to see if you're using the money-saving ideas listed here.

• Most prevalent waste of supplies is the use of too many folders. Reducing the number of folders will conserve space in the cabinets and put closely related information in a single place where it can be easily found.

 Create a miscellaneous folder for single paper filings. Place one such miscellaneous folder with each letter of the alphabet, with each file drawer or with the entire cabinet.

• Keep a subject file list handy. If placed so that it can be seen at a glance, a subject file will assist proper placement of new information. One of the biggest headaches is lost data. Usually this happens because the item can go under two or more headings. When the information is needed, no one remembers the heading originally selected. Setting up a subject file list helps spot the document in the proper place.

• Use cross-reference sheets. When a document can be filed in two or more folders, put a cross reference sheet in the folders not

 Remove paper clips and mend torn papers.

Maintain control over material taken from files. Having such a system impresses personnel with the importance of taking care of

"We'll be sorry to see you go, Miss O'Neal. Your filing has afforded us many hilarious moments."

filed material and promptly returning it to its proper place. Control can be achieved with a card the size of the folder that is inserted in the place where the folder was removed. Small sign-out slips may also be used.

 Make greater use of storage or transfer files. Going through the active file every six months will produce much "dead data." This can be removed, making the active file less crowded and easier to use.

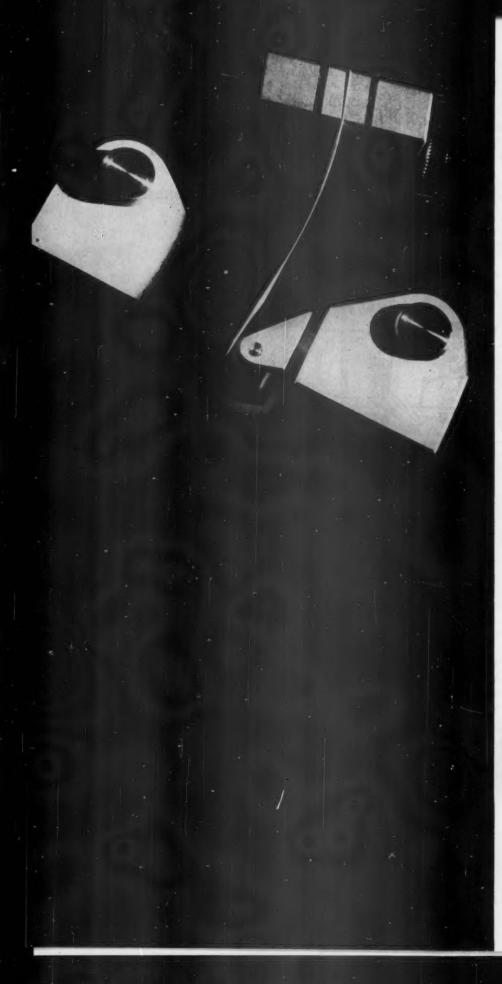
Make one individual responsible for all files in the purchasing department. When everyone handles the filing, there will be a score of individual methods being used.

 A good filing system is neat and orderly. Anything the purchasing agent can do to keep his files that way makes them more practical and useful.

In small offices or small departments the filing system is generally considered of little importance. However, even there when a certain document is vitally needed, a haphazard system can mean disaster.

Keeping a good filing system is easy and inexpensive. It not only reduces costs, but also assures the purchasing agent that whenever he needs a paper in a hurry it is immediately available.

For More Information about ad on facing page Write No. 256 on Place Mark Card—pg. 32→ PURCHASING



#### THE CARD WITH SPECIAL BACKING

#### ...in quality

For smooth-flowing, economical data processing, your punched cards must consistently meet the requirements imposed by your data processing machines. Any sacrifice in their quality can cause mistakes, lost time and higher costs—all of which destroy the efficiency of your data processing.

The IBM card is made to precise specifications based on over 40 years of research, testing and analysis of card performance and customer installations. Every step in its manufacture is performed by skilled personnel working with the proper tools. It must pass every known quality control test that has practical application in card production. The card stiffness test (illustrated at the left) is but one of a score of such tests performed daily in IBM Laboratories and on card production lines. This quality control program-without parallel in the industry-offers positive assurance that the IBM card has the uniformity, durability and reliability you need.

The IBM card is backed by unmatched DESIGN and SERVICE, too. Through IBM's many Card Design Centers...its Sample Card Center...its nationwide network of Card Plants and Warehouses...and through its Supplies Specialists and its Sales Representatives, who know both card and machine requirements...the purchaser of IBM cards enjoys prompt, expert and complete assistance with any of his card needs.

This special backing makes the IBM card a value unsurpassed in the industry... and represents one more example of the way IBM helps you to enjoy Balanced Data Processing.



IBM. SUPPLIES



Bostitch office staplers operate with a light touch; and they'll take a heavy wallop, too! When you standardize on Bostitch office staplers, you're buying staplers built to last.

Extra strength goes into every Bostitch office stapler. They're built to the same quality standards and tolerances as the entire line of 800 Bostitch stapling machines.

Extra strength and completeness of line are two good reasons for standardizing on Bostitch. Another is convenience in ordering. One call and one order can care for all your stapling needs.

The man to call is your Bostitch Economy Man, who is listed under "Bostitch" in your telephone directory. Ask to see the "B-line," ten stapler models to meet all your office requirements.

Fasten it better and faster with



727 BRIGGS DRIVE, EAST GREENWICH, RHODE ISLAND

For More Information Write No. 257 on Place Mark Card-Page 32

#### Hammermill Graphicopy Papers make your printing jobs come out sharp and clear



Hammermill makes Graphicopy® Papers in all the grades, weights, colors and finishes you need. You can turn out good-looking offset jobs on 271 of them. Each has its own order number. For example, "10-020". That stands for Hammermill Bond, 8½ x 11, white, substance 20, Rippletone finish. You don't have to mention the grade, size, color or weight of the paper you want. Just the number.



Use stencil duplicating papers?
Hammermill Mimeo-Bond and
Graphicopy Papers give you 212
hard-working, lint-free varieties.
The order number for each Graphicopy
item is listed on Hammermill's new,
11¾ x 27¾ wall chart – the
Graphicopy Paper Selection Guide.
Get one from your Hammermill
supplier or write Hammermill Paper
Company, 1461 East Lake Road,
Erie 6, Pennsylvania.

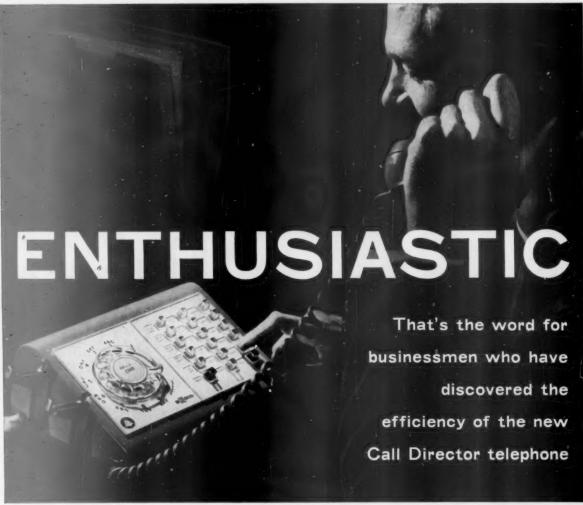
want. Company, 1461 East Lake Road, Erie 6, Pennsylvania.

For More Information Write No. 258 on Place Mark Card—Page 32



If you work with spirit and gelatin duplicators, you have a choice of 157 Hammermill duplicator papers. They give outstandingly bright, sharp copies. Hammermill makes Double-Purpose Master Paper, too—for long and short runs. All Hammermill Graphicopy Papers are cut square and free from curl. Moisture-proof ream wrappers seal in the Hammermill quality and guarantee fast-running performance.







Henry J. Blackford, Jr., Branch Mgr., Alex Brown and Sons, Investment Securities, Spartanburg, South Carolina:

"For years, we have been waiting for telephone equipment like the Call Director. We have it now—and I can tell you it's doing a fine job for us. Our salesmen can take calls on any of our eleven lines and handle a lot more calls. We're really enthusiastic about the new service, and so are our customers."

Available in 18-button and 30-button models-in gray, green or beige.



Ray K. Deems, President, Friedman-Deems and Associates, Columbus, Ohio:

"We do 90% of our real estate business by telephone, and our new Call Director phones and intercom system have really streamlined our operations. We now handle more accounts than ever, and do it faster—without adding new people or office space. We figure the new system saves us \$225-plus per month."



R. L. Getten, Midway Loan Company, St. Paul, Minnesota:

"We were outgrowing our key-box facilities, but still weren't big enough for a switchboard. Your proposal of Call Director telephones with intercom really solved our problem. Now we're giving customers the service they deserve—and can expand as needed by simply using the Call Director's extra pushbuttons. Congratulations on the Call Director. It's terrific!"

The Call Director telephone with Bell System intercom could give *your* business a boost, too. Why not call your Bell Telephone business office for details? A representative will visit you at your convenience. No obligation, of course.

BELL TELEPHONE SYSTEM



For More Information Write No. 259 on Place Mark Card-Page 32

#### Office Equipment

Marking ink which is removable by water has been developed by Organic Products Company, P. O. Box 428, Irving, Texas. It is for use where markings are temporary and later to be removed. The new ink has good adhesion to metals and plastics and is noncorrosive to metals; it will not etch metals and most plastics. It is applied by using rubber stamps and ordinary ink pads or in felt-tipped pens and in certain types of printing machines.

Write No. 58 on Place Mark Card—Page 32

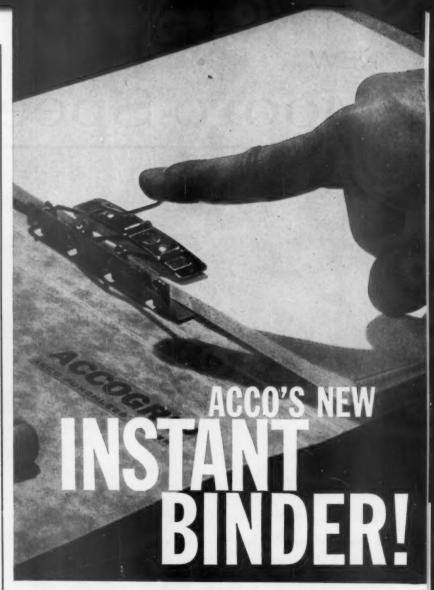


New recorder-reproducer that uses tamper-proof tape to electronically record industrial and governmental meetings of all kinds was recently introduced by The SoundScriber Corporation, North Haven, Conn. The instrument permits 16 hours of nonstop recording. The tape is two inches wide and has reference calibrations printed at 40 second intervals. Tapes can be erased on a special tape demagnetizer.

Write No. 59 on Place Mark Card—Page 32

How substantial savings can be effected in business and industry through planned use of internal communications is described in a booklet called "11 Hidden Losses In Your Business" being offered free by Dictograph Products Inc., 95-25 149 St., Jamaica 35, N. Y. The booklet shows the role internal communications systems play in eliminating costly return telephone calls, improving customer relations, and maintaining privacy.

Write No. 60 on Place Mark Card—Page 32 For More Information Write No. 260 on Place Mark Card—Page 32→ JULY 18, 1960



#### GRIPS AT A TOUCH of the finger—releases

instantly, too. ● Has ½" capacity—yet holds even one sheet securely. No marring. No holes.

• The ideal work organizer.





Hundreds of uses—work sheets, photos, catalogs, letters, sheet music, blueprints. Genuine pressboard—red, black, grey, green or blue. Letter, legal size.

ASK FOR ACCO's new booklet "IdeasThat SaveTime and Space" —available free at office outfitters.

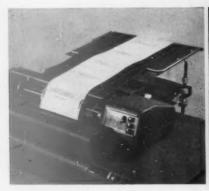
ACCO PUNCHLESS BINDER

Or write: ACCO PRODUCTS, ACCO PUNCHLESS BINDER

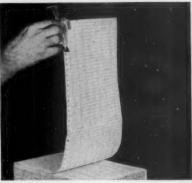
A Division of Natser Corporation, Ogdensburg, N.Y.- In Canada: Acco Canadian Co., Ltd., Toronto

### Moore Speediflex

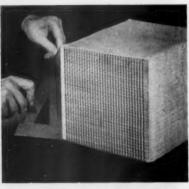
### GIVES YOU THESE THREE FORMS-HANDLING BENEFITS



1 PERFECT FEEDING-The entire set of parts and carbon feeds, naturally and in perfect alignment, around the writing platen.



2 PERFECT REGISTER, because there's no tenting or peaking, and both sides flow freely in natural, flexible movement.



3 PERFECT REFOLDING in neater square packs results from still another advantage—Moore's unique way of perforating the sets.

This Moore 'first'—a brand new concept—results in new forms-handling efficiency for users of continuous marginal punched forms. The revolutionary new dimension is the flex-cut carbon. It acts as a flexible bond between the various parts, and allows the Speediflex unit to flow naturally without 'tenting' or 'peaking,' aligning at the point of writing for perfect part-to-part register. This great new form introduces many other forms-handling benefits. For a demonstration, look up the Moore man in the telephone directory or write the nearest Moore office.

Speediflex is a patented product of Moore Business Forms, Inc.

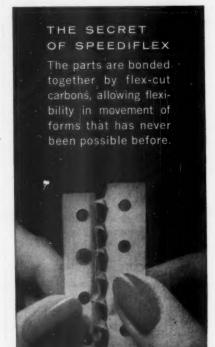
Moore Business Forms, Inc., Niagara Falls, N. Y.; Denton, Texas; Emeryville, Calif. Over 300 offices and factories throughout the United States, Canada, Mexico, Cuba, Caribbean and Central America.

MOORE

Build control with

#### MOORE BUSINESS FORMS

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#### If you're fussy about getting good copies -get a Kodak Verifax Copier!

Verifax copies spoil you for all others. They have the look and feel of good letterheads . . . are a pleasure to read, handle, file. Also, they are as accurate as the originals . . . and they won't fade or darken over the years.

See how your secretary can make 5 of these dry, white, more usable copies in 1 minute for 21/2¢ each with Kodak's \$99.50 Verifax Bantam. Phone local Verifax dealer (see Yellow Pages under duplicating or photocopying machines), or write Eastman Kodak Company, Business Photo Methods Division, Rochester

4, N.Y. for booklet describing all Verifax Copier models.



erifax Copying DOES MORE... COSTS LESS ... MISSES NOTHING!



#### **Association News**

Through the eye of PURCHASING'S Camera

# Erie and Lima P.A.'s Host To Top-Notch Speakers



**ERIE**—A veteran P.A., Charles Portenier (left), former purchasing agent of Griswold Manufacturing Co., gives some advice to J. M. Magenau, Jr. (center) and Merle Wadlinger.



**ERIE**—William Thayer (left), Autoclave Engineers, president of the Association, chats with Mr. and Mrs. Roy Zahner before the meeting. Mr. Zahner is purchasing agent of Copes-Vulcan Co., a divison of Blaw Knox, Inc.



ERIE—J. F. Becker (right), Erie Brewing Co., gets some advance information from the speaker at a recent meeting. The guest is Lony Ruhman, research manager of Container Corporation of America.



LIMA—Robert Landers (left), Westinghouse Electric Corp., program chairman, talks with guest speaker F. H. Yost, Jr., assistant director of corporate relations for Dow Chemical Co. R. P. Gray, Marathon Pipeline Co., looks on.



LIMA—A good crowd came out to hear Mr. Yost speak on "Trade Relations." Shown here are (left to right): L. W. Landwehr, Stamco Inc.; Carl M. Lehman, Blufton College; Leonard McCracken, Ex-Cell-O Corp.; N. Pierce, B.L.H. Corp.; and W. H. Ebling, Lima Cement.

#### PARKER VITON O-RINGS

where to buy & get more information

ALABAMA

ALABAMA
Birmingham: Owen-Richard, Inc. FA 2-3611
Mobile: Bearings & Trans. Sply. Co. HE 8-3591
ARIZONA
Phoenix: Air-Draulics Co. Al. 4-4703
Phoenix: Arrow Valve Corp. Al. 4-729
CALIFORNIA
Inglewood: Aero Bolt & Screw Co. OR 8-3931
Oakland: Nor-Cal Supply Co. LO 9-3121
Glendale: Robert B. Porter Co. CH 5-7631
Hayward: Robert B. Porter Co. LE 7-0300
COLORADO
Englewood: Rocket Components Co. 9-2548

Ciendale: Robert B. Porfer Co. CH 5-7631
Hayward: Robert B. Porfer Co. JE 7-0300
COLORADO
Englewood: Rocket Components Co. 9-2548
FLORIDA
Jacksonville: Dixle Bearings, Inc. EL 5-1387
Miami Springs: Wencor, Inc. NE 5-0700
GEORGIA
Hapeville: Air Associates, Inc. PO 6-5353
Atlanta: Dixle Bearings, Inc. Inc. DE 7-5373
Chicago 10: Jay Berwanger Co., Inc. DE 7-5373
Chicago 22: W. H. Salisbury Co. HA 1-4850
Northbrook: Syntech Rubber Corp. CR 2-2210
HDIANA
Intianapolis: Avels Sales & Eng. Co. ME 9-1326
IOWA
Cedar Rapids: Globe Mach. & Supply EM 5-6911
Davenport: Globe Mach. & Supply 2-7151
Davenport: Globe Mach. & Supply 1786
Des Moines: Globe Mach. & Supply 1786
Semasa City: Standard Products, Inc. DR 1-2266
Wichita: Standard Products, Inc. AM 2-5161
KENTUCKY
Louisville: Dixle Bearings, Inc. EL 7-2257
New Orleans: Dixle Bearings, Inc. EL 7-2257
Marsa Components Dixle Bearings, Inc. EL 7-2558
Marsa Chily: Standard Products on MU 5-5654
Marsa Chillians
Martiand
Baltimore: Louis H. Republic On TE 2-4180
Detroit 1. J. N. Fauver Co. Pl 2-3304
Detroit 1. J. R. Fauver Co. Pl 2-3304
Detroit 1. J. R. Fauver Co. Pl 2-3304
Detroit 1. J. N. Fauver Co. Pl 2-3304
Detroit 1. J. R. Fauver Co. Pl 2-3304
Detroit 1. J. R. Fauver Co. Pl 2-3304
Detroit 1. J. R. Fauver Co. Pl 2-3404
Detroit 1. J. R. Fauver Co. Pl 2-3304
Detroit 1. J. R. Fauver Co. Pl

Detroit 39: Roger Zatkoff Co., Inc. KE 2-2121
MISSOURI
St. Louis 8: Foster Mech. Equip. JE 3-9610
Joplin: Industrial Equip. Co. MA 4-1400
St. Louis 3: 'Sealtite Corp. CE 1-7724
NEBRASKA
Omaha: Wilson-Wylie Dist. Co. AT 9873
NEW JERSEY
Hasbrauck Hts.: C. E. Conover & Co. AT 8-3800
Jersey City: Louis H. Hein Co. HE 5-1965
NEW YORK
Woodside: Durham Aircraft Services AS 4-9000
Alden: Hercules Packing Corp. MU 2300
Schenectady 8: Staver Hydraulic Co. TU 2-2751
NORTH CAROLINA
Charlotte: Dixie Bearings, Inc. ED 2-2151

Schenectady 8: Staver Hydraulic Co. FR 7-2204
Waverly: Staver Hydraulic Co. TU 2-2751
NORTH CAROLINA
Charlotte: Dixie Bearings, Inc. ED 2-2151
Greensbors: Dixie Bearings, Inc. ED 2-2151
Greensbors: Dixie Bearings, Inc. BR 4-4686
Cleveland: Cleveland Ball Bearing Co. HE 1-8666
Cincinnati 13: J. N. Fauver Co. TW 1-8400
Akron 8: B. W. Rogers Co. PO 2-0251
Cleveland: Cleveland 14: B. W. Rogers Co. SU 1-2530
Columbus: Williams & Co. XX 4-1623
OKLAHOMA
Oklahoma City: Ind. Gskt. & Pack. Co. LU 7-2365
Tulsa: Standard Products, Inc. TE 8-3371
Usa: Standard Products, Inc. TE 8-3371
Eugene: Bearing Sales & Service DI 5-0325
Portland: Bearing Sales & Service CA 6-7141
Roseburg: Bearing Sales & Service OR 3-4641
PENNSYLVANIA
Philadelphia 40: Goodyear Supply Co. DA 4-5361
PITSSUPVLANIA
Philadelphia 40: Goodyear Supply Co. DA 4-5361
PITSSUPVLANIA
Greenville: Dixie Bearings, Inc. D-9601
TENNESSEE
Chattanooga: Dixie Bearings, Inc. S-9601
TENNESSEE
Chattanooga: Dixie Bearings, Inc. AM 7-9526
Knoxville: Dixie Bearings, Inc. C. 6-6195
Nashville: Dixie Bearings, Inc. C 16-6195

TEXAS

CANADA
Montreal: Railway & Power Eng. WE 3-6741
Toronto 2: Railway & Power Eng. EM 2-4771
Hamilton: Railway & Power Eng. IA 8-4251
Windser: Railway & Power Eng. CL 6-5408
N.D.G. Mentreal, E.: Abercorn Aero Ltd. HU 9-4978

"WHAT'S THAT ABOUT ITON RINGS?

"Well, sir, it's this -

"Parker Seal Company has pioneered in research, developing and engineering Viton O-Rings. This responsible leadership in O-Ring engineering enables them to offer these firsts in Viton:

- 1. All AN (ARP) sizes as standards no charge for tooling, faster delivery, proved and tested quality.
- 2. Industrial Viton O-Rings at amazingly low cost.
- 3. A Viton Design Handbook with considerable basic material on design, compounds and sizes.

4. Little or no lead time, even on "exotic" compounds developed for special applications."

Parker Seal Company's nation-wide staff of sales engineers and distributors are eager to serve you. If you would like a copy of our Viton O-Ring Handbook call the distributor nearest you (see list at left) or write direct to factory.



#### KER SEAL COMPANY

Culver City, California and Cleveland, Ohio A DIVISION OF PARKER-HANNIFIN GORPORATION

For More Information Write No. 263 on Place Mark Card-Page 32

For More Information about ad on following page Write No. 264 on Place Mark Card-pg. 32→

# Make a Fast...Easy...Accurate Selection of

and know your size, shape, and grade are

The Allegheny Ludlum Tool Steel

- very type needed for 96% of all tool steel applications
- easy selection of the proper tool steel based on its individual characteristics
- ✓ stock shipment of grade and size assured at selection time



### the Proper Tool Steel for any Application

Available with the A-L Steelector Program

#### easy answer to an old problem

Starting right now, the common problem of selecting the right tool steel for any job can become a thing of the past. With A-L's new STEELECTOR Program, you can make a *first time choice* of the proper grade for any application . . . and make it FAST, almost at a glance.

#### eliminates guesswork

The STEELECTOR is ACCURATE, eliminating guesswork, trial runs, and expensive mistakes. And best of all, the STEELECTOR gives you a choice of tool steels that are AVAILABLE... in stock, right now! And they'll stay available... with a new, increased stocking program. STEELECTOR Grades are stocked according to a study of today's needs and will be reviewed periodically to fit changing requirements.

#### here's how it works

In the new program, a STEELECTOR Card covering each group of steels (Tool Room, Hot Work, and High Speed Grades) will help you select one particular grade as the best for your application. The STEELECTOR presents five basic tool steel properties—Abrasion Resistance—Toughness—Size Stability—Machinability—Red Hardness—as bar graphs, with the length of the bar showing the extent of each property in every STEELECTOR Grade. Find the properties most important to you and, by inspection, pick the grade with the characteristics you need.

#### availability assured

There is a separate Data Stock List for each STEELECTOR Grade, showing its complete range of warehouse stocks, as well as technical



data and basic application information. So, you can be sure the grade, size, and shape of your choice is in stock.

#### quality assured

And you can count on Allegheny Ludlum quality in every STEELECTOR Grade. They are selected from the complete line of A-L Tool Steel and made under the rigid quality control standards of all A-L products.

#### details available

It's all explained in the colorful A-L Tool Steel STEELECTOR Booklet, which includes STEELECTORS for the Tool Room Grades, Hot Work Grades, and High Speed Grades, and explains the Data Stock Lists for every STEELECTOR Grade. Ask your Allegheny Ludlum Sales Representative for your copy, or write: Allegheny Ludlum Steel Corporation, Oliver Building, Pittsburgh 22, Pa. Address Dept. Ins. 7.





ALLEGHENY LUDLUM

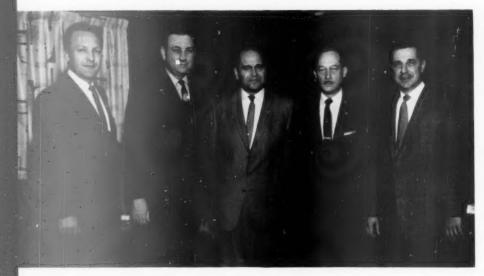
Tool Steel warehouse stocks throughout the country





#### **Association News**

Through the eye of PURCHASING'S Camera



KALAMAZOO - Association activities for the year 1960-61 will be guided by these recently elected officers (l. to r.): James E. Donahue, Allen Electric Co., director of national affairs; Paul F. Barthold, Beach Products, Inc., president; Emil J. Sokolowski, Western Michigan University, professional development; Albert A. Parker, Ihling Bros.-Everard Co., secretary; and Paul V. Ernst, Borroughs Mfg. Co., vice president. Treasurer Harry F. Anderson, Kalamazoo Container Corp., was not present when the photo was taken.



CLEVELAND-New board of trustees (seated I. to r.): Stephen Bodner, Bearnings, Inc.; Paul P. Averill, The Warner & Swasey Co.; W. H. Conant, The Weldon Tool Co.; Ray Bosch, Thompson Ramo Wooldridge; Stewart P. Brownell, Cleveland Electric Illuminating Co. Standing are (l. to r.): H. O. Veverka, Cleveland Worm & Gear; Gerald J. Hagerty, National Specto-graphic Laboratories; M. V. Hecht, Standard Envelope Mfg. Co.; Vince Collins, Freeway Washer & Stamping Co.; and William Thompson, Westinghouse Electric Corp.



SYRACUSE—Installion of officers took place at a recent meeting of the Association. The new slate includes (I. to r.): R. H. Greenfield, Gray-Syracuse, Inc., treasurer; George L. Petrie, R. E. Dietz Co., second vice president; William L. Walls, Ithaca Gun Co., president; F. P. Bauman, General Electric Co., first vice president; and John E. Edmonds, Lipe-Rollway Corp., secretary.

## Metal users, save money!



# simplify materials control... standardize manufacturing processes





# by standardizing on two alloy steels... 4340 and 4620

4340 THROUGH-HARDENING—Use AISI 4340 for moderate-to-heavy section parts...to get maximum strength, toughness, reliability. It's readily annealed to facilitate machining...can even be machined as heat treated in many cases. Welds readily with normal precautions. Responds reliably to heat treatment.

4620 CARBURIZING—Use AISI 4620 for all except the very heaviest duty carburized parts. It is the steel least apt to distort in heat treating. Case hardens easily with excellent case toughness. Shows uniform response to treating. You can treat mixed furnace loads . . . eliminate a re-heating cycle . . . save more money.



Easy to Get... Both these steels are carried by Steel Service Centers from coast to coast... ready for delivery on a "next door" basis. For a list of these sources, write: 67 Wall St., New York 5, N.Y.

THE INTERNATIONAL NICKEL COMPANY, INC. 67 Wall Street New York 5, N. Y.





#### **Association News**

Through the eye of PURCHASING'S Camera



UTAH—Newly elected officers and directors of the Utah Association are (seated I. to r.): C. B. Bartlett, Allen Steel Co., chairman of board; Glen S. Winegar, Salt Lake City Board of Education, president; and E. Thomas Lloyd, Beneficial Life Insurance Co., vice president. Standing are (I. to r.): W. L. Emmertson, Salt Lake Refining Co.; Keith Olson, Eaton Metal Products Co.; Paul W. Flandro, Litton Industries; R. W. Ashard, Zions First National Bank; and A. C. Mauss, Utah Oil Refining Co.



FLORIDA—Walter H. Norman (left), Orlando Utilities Corp., president of the Florida Association, ponders a question during a pre-meeting chat with Joe Blumer, Gulf Power Co. (center), and Ralph O. Dreifus, Trio Electric Supply Co.



EASTERN NEW YORK—Recently elected officers are (I. to r.): J. B. Montgomery, General Aniline & Film Corp., first vice president; W. C. Bryant, Jr., National Commercial Bank & Trust Co., treasurer; Austin A. Woodward, The Woodward Co., president; R. C. Dawes, General Electric Co., secretary; C. E. Anderson, Ford Motor Co., national director; and Mark B. Patten, Behr-Manning Co., second vice president.



MILWAUKEE—Fred J. MacDougall, Allis-Chalmers Mfg. Company, president of the Milwaukee Association, presents diplomas to the 25th Anniversary graduating class of the course in "Industrial Purchasing." The course is co-sponsored by the Association and Marquette University.

# EASTERN ANNOUNCES ITS NEW FLEET OF FLYING FREIGHTERS



# **OVERNIGHT DELIVERY**

NEW YORK—MIAMI—SAN JUAN
NEW YORK—ATLANTA—NEW ORLEANS—MOBILE—HOUSTON
CHICAGO—ATLANTA—MIAMI—SAN JUAN

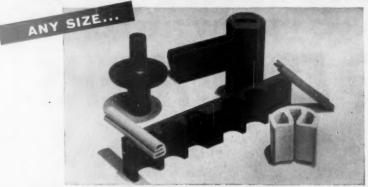
- Reserved space on every Freighter flight.
- Pressurized and temperature-controlled.
- Flights daily except Saturday and Sunday nights.
- Pickup and delivery service available.

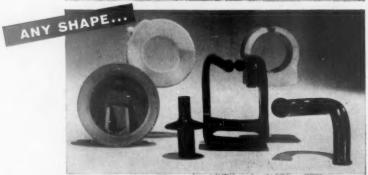
In addition, Eastern offers freight space on over 400 daily passenger flights—including DC 8-B Jets and Prop-Jet Electras—to 128 cities in the United States, Canada, Bermuda, Puerto Rico and Mexico. For Information and Freight Reservations, call your Freight Forwarder, Cargo Agent or Eastern Air Lines.

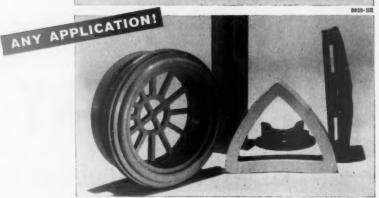
# EASTERN AIR LINES

YEARS OF DEPENDABLE AIR TRANSPORTATION
For More Information Write No. 265 on Place Mark Card—Page 32

## PRODUCES PRECISION CUSTOM UBBER PARTS TO YOUR EXACT SPECIFICATIONS



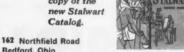




Compounded from all types of natural and synthetic rubber, Stalwart custom parts are molded, extruded, cut, calendered, sponged or spliced to meet the most exacting performance requirements . . . as well as all standard specifications established by military and industrial organizations. Every Stalwart customer is assured of the highest quality plus important production economies . . . through modern production facilities, advanced compounding techniques and extensive testing facilities. Write us today about your special rubber parts problem or check with Stalwart's Plastics Division for injection molded parts to meet your requirements.

THE WORLD'S LARGEST PRODUCER OF SILICONE CUSTOM RUBBER PARTS

Send for your copy of the new Stalwart Catalog.



Bedford, Ohio Subsidiaries: Jasper Rubber Company Warren Molded Plastics, Inc.

For More Information Write No. 266 on Place Mark Card-Page 32

#### **Association News**

#### VASCO Expert Speaks At Chicago Meeting



A packed audience greeted Larry Miles, manager of value analysis at General Electric Co-, when he spoke before the Purchasing Agents Association of Chicago recently. Mr. Miles gave an inspiring talk on the enormous savings that can be made with organized value analysis. He is shown here demonstrating some of the parts on which G.E. has saved substantial sums.

#### 4th District Conference Has Renowned Speakers

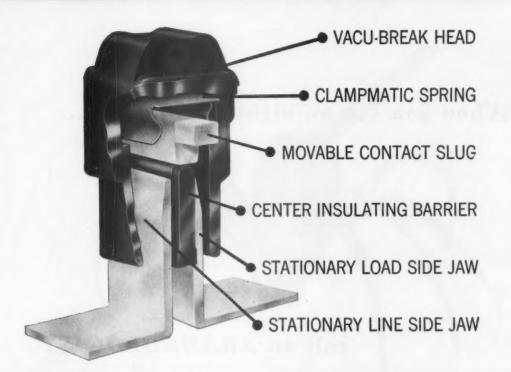
The Fourth District of the National Association of Purchasing Agents joined with Michigan State University to sponsor a two-day seminar.



Dr. John Hoagland, Michigan State University, was on hand to greet Assistant Secretary of Commerce Bradley Fisk. Both Mr. Fisk and Dr. Hoagland brought interesting and provocative messages to the Fourth District Purchasing Confer-

Among the outstanding speakers on the program was Thomas O. English, Aluminum Company of America, and former national (Please turn to page 186)

For More Information about ad on facing page Write No. 267 on Place Mark Card—page 32→ PURCHASING



## INCREASED SWITCH LIFE WITH CLAMPED PRESSURE CONTACT AND VACU-BREAK ARC CONTROL

You get longer switch life from BullDog safety switches, thanks to unique BullDog design. The high-tension Clampmatic' spring puts pressure where it belongs—on contact faces after the switch is "ON." This clamped pressure action assures good electrical contact for the life of the switch. It means the switch lasts longer, too, for there's no overheating to damage switch components. In switching "OFF," the pressure's removed before the "break"... providing true quick-break action.

Vacu-Break\* design is another reason BullDog safety switches last longer. Switching contacts are completely enclosed in the Vacu-Break head. Arcs are restricted, starved of oxygen, cooled and smothered quickly. In addition, Vacu-Break double-breaks the circuit, effectively reducing the arc length and arcing time.

Vacu-Break arc control plus clamped pressure contacts add up to long switch life . . . and dependable, economical service for you. You'll find BullDog safety switches need little or no maintenance over years of heavy-duty use. See your BullDog products distributor.

#### FOR SAFETY'S SAKE-BUY VACU-BREAK!

BullDog Electric Products Division, I-T-E Circuit Breaker Company, Box 177, Detroit 32, Michigan. In Canada: 80 Clayson Rd., Toronto, Ont. Export Division: 13 East 40th St., New York 16, N.Y.



BULLDOG ELECTRIC PRODUCTS DIVISION

I-T-E CIRCUIT BREAKER COMPANY



When you see an eight-eyed spider...

call an ARANEOLOGIST
(specialist in spiders)

# when you've got welding problems... call in *LINCOLN*

(specialists in arc welding)

A SOUTHERN sheet metal fabricator had "burn-thru" in the welds. The LINCOLN Field Engineer recommended Fleetweld 37 and licked the "burn-thru" problem. But more important, the new electrodes increased welding speeds to such an extent that overall costs dropped a third.

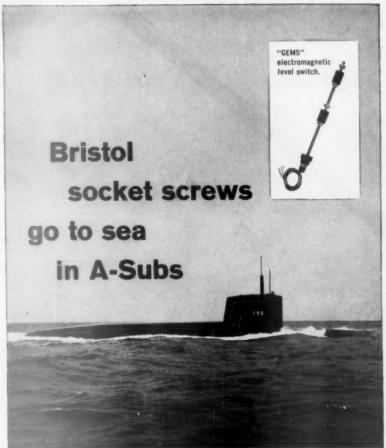
And right there is a good reason for doing business with LINCOLN. Ideas to whip knotty production problems come naturally to the Field Engineers. They are factory-trained where they—and everyone else—gets paid according to his individual contribution to the company's goal—superior products and service to you at continually decreasing costs. So, while he knows welding, he also understands how to relate it to your total manufacturing operation.

That's why we say it's a good idea to do business with LINCOLN where arc welding is a specialty and cost reduction comes to you as a "plus" at no charge.

THE LINCOLN ELECTRIC COMPANY

Dept. 2820 · Cleveland 17, Ohio





U.S.S. George Washington, missile-firing atomic submarine. Photo courtesy of Electric Boat Division of General Dynamics Corporation, Groton, Conn.

Bristol Multiple-Spline socket screws are playing an important part in "GEMS" switches, used on some of the U.S. Navy's newest atomic submarines.

The GEMS Company, Newington, Conn., has standardized on the Bristol Multiple-Spline socket screw for use in their line of level switches, flow switches and other special switches. GEMS (stands for "Guaranteed Electro-Magnetic Systems") likes the Multiple-Spline because it takes tighter wrenching and because the distinctive spline design tends to prevent mechanics from disturbing critical calibration-holding screws without proper test equipment.

This application is just one of thousands of jobs Bristol Multiple-Spline socket screws are doing in today's complex technology. They're ideal for electronic computers and communications equipment, appliances, desk calculators and other office equipment, precision machine tools, and a tremendous variety of other equipment.

Bristol socket screws are available in a complete line from leading industrial distributors. Both cap and set screws come in industry standard hex socket, as well as in the Bristol-originated Multiple-Spline sockets—sizes as small as No. 0. See your Bristol distributor; he can give you complete information on sizes and types available and fill your requirements with fast delivery from complete distributor stocks.



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#### **Association News**

(Continued from page 182)

president of N.A.P.A.

Dr. John Hoagland, from the University, spoke on "Current Business Cycle Trends."

The conference was opened by Bradley Fisk, Deputy Assistant Secretary of Commerce for International Affairs. He spoke on a topic which continues to draw great interest, "Purchasing of Foreign Commodities."



At the Fourth District Purchasing Conference, James E. Bochert, A. O. Smith gave a picturesque demonstration of where the corporate dol-

Mr. Fisk said, "Our country needs a high level of sales abroad ... Exports make wages for workers, profits for management and dividends for stockholders.

"As the nation embarks upon this total national effort for expanded export sales, however, we find that our competition in markets at home and abroad is strong."

The Commerce official reminded his audience of purchasing executives that there are important problems that must be faced and overcome when initiating new trading relations. "The buyer who wishes to deal direct with the foreign supplier," Mr. Fisk emphasized, "must become well acquainted personally with their divergent characteristics."

Assistant Secretary Fisk recommended the Foreign Commerce weekly and international trade fairs as to two methods by which purchasing agents can familiarize themselves with world markets.

(Please turn to page 188)



## The alternate to this is . . . DOWNTIME!

An ounce of prevention...can eliminate downtime in your plant. With today's highly mechanized manufacturing and distribution methods... downtime of materials handling equipment can mean the difference between a profit or a loss.

A Clark Dealer Continuous Maintenance Program, available from 113 Clark dealers across the continent, offers you the most effective, and economical method of reducing costly downtime. Here's why!

In brief, a Clark Dealer Continuous Maintenance Program offers you:

1)...regular maintenance on your industrial trucks on a programmed basis. Scheduling is conveniently set up for your particular operation. If you like, service to your equipment can be done at night or at any other time when your equipment is not in use. The additional cost for this off-shift service is a small percentage of the cost of downtime.

2) Clark dealers, with the aid of a national service personnel training program, assure you that the best trained mechanics in the industry will service your equipment. These highly trained specialists perform a minimum of 22 separate in-

spections on every truck serviced. They not only perform the normal jobs of greasing and oil changes, but also make all necessary adjustments to your equipment. Most important, they report the condition of your machines, anticipating failure before it happens. As a result . . . downtime is drastically reduced.

3) A Clark Dealer Continuous Maintenance Program gets you out of the repair and maintenance business. It eliminates the need for special tools, parts stock and use of valuable plant space for servicing facilities.

4) A Clark Dealer Continuous Maintenance Program is economical. It actually costs less than similar service on your own automobile. This is an inadequate comparison, however, when you consider the small cost of preventive type maintenance to the cost of downtime.

For detailed information on a Clark C.M. program call your local Clark dealer (he's listed in the Yellow pages) or write: C.M. Service,

Clark Equipment Company, Battle Creek, Michigan. No obligation, of course.





Rustproof, corrosion-proof, lightweight "Pop-Action" design shown above opens slightly under moderately excessive pressure—"pops" to full discharge when pressure exceeds a predetermined point—reduces pressure in container quickly and safely. Valve types available with start-to-discharge settings from 1 to 450 P.S.I.G. Sizes range from ¼" to 1½" For complete information and specifications about RegO relief valves and safety relief devices...

mail this coupon, today!

The Bastian-Blessing Compan	У
Chicago 46, Illinois	
Please send me Catalog GG-300.	
Name	
Company	
Address	
Address	

#### For More Information Write No. 270 on Place Mark Card-Page 32

#### **Association News**

(Continued from page 186)

"I urge," Mr. Fisk concluded, "that all of you devote some portion of your time in the near future to a thoughtful consideration of how your individual responsibilities as purchasing people can serve the goals of expanded exports of U. S. goods. I would personally welcome your comments."

#### Office Buyers Elect Chairman

Robert Ames, New York purchasing representative for U. S. Steel Corp., and member of the board of directors of the New York Purchasing Agents Association was elected chairman of the Office Buyers Group. The election took place during the national convention in Los Angeles.

H. Woods, Ethyl Corp. will serve with Mr. Ames as vice chairman. Harold Ward, International Nickel Co. will act as secretary. The executive committee for this very active group is: Edwin Johnson, Massachusetts Mutual; J. F. Scott, Travelers Insurance; and Charles Bobb, Fidelity-Philadelphia Trust Co.

The group is planning to hold regional meetings dealing with the problems of the office, office equipment and paperwork precedures during the year. Sites for the meetings are still undecided.

#### Grand Rapids P.A.'s Warned About Not Looking Into Foreign Supply Sources

The Grand Rapids Association of Purchasing Agents recently invited the vice president and general manager of the West Michigan Dock & Marketing Corp., Ralph S. McCrea, in Muskegon to bring members of the Association up-to-date on the St. Lawrence Seaway.

Mr. McCrea brought a boatload of information to these purchasing agents who live and work around Lake Michigan. He said that the middle west is the world's greatest manufacturing area and

(Please turn to page 192)



# They had a \$1000 lunch in their cafeteria

When the purchasing agent met the comptroller and vice president in the company cafeteria, the talk turned to rising costs.

"We're looking for ways to save money on paper napkins for example," the purchasing agent said as he picked up one from the table.

And they saved money-cut costs by switching to Fort Howard Napkins in the Cafeteria and Fort Howard Towels and Tissue in the washrooms. Fort Howard paper products saved this company as much as \$1,000 per year on paper costs. The answer was in the right product for the job.

Fort Howard Paper Towels, Tissue, and Napkins are available in a wide range of folds, rolls, and quality. This means you can cut costs by selecting the proper grade, fold, roll, or pack in the price range you need to meet your requirements exactly.

There is a Fort Howard representative nearby anxious to demonstrate to you how dining room and washroom expenses can be cut, and happy employee relationships maintained.



JULY 18, 1960

## Fort Howard Paper Company

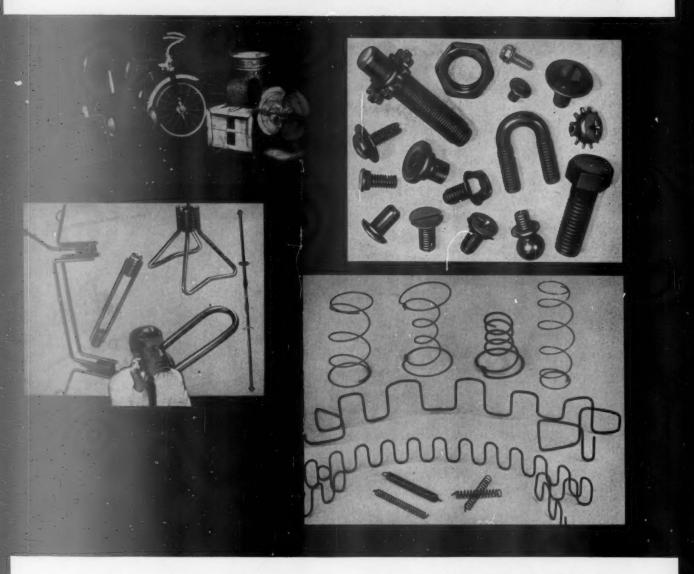
Green Bay, Wisconsin

Sales Offices in New York, Chicago, Los Angeles America's Most Complete Line of Paper Towels, Tissues and Napkins

For More Information Write No. 271 on Place Mark Card-Page 32

For More Information about ad page Write No. 272 on Place Mark Card-

## **IMAGENUITY IN WIRE**



Imagine wire of consistently uniform quality that assures accurate, easy forming with adequate strength and toughness to meet the most difficult design and forming problems.

forming problems.

That's Republic Steel Wire—strong, ductile, tough—available in many types and in a wide range of gages and physicals for almost any product you can imagine.

The variety of products illustrated above are examples of "imagenuity in wire"—engineering imagination plus modern business ingenuity. Fabricators of these products use:

- 1. Republic Manufacturers' Coarse Wires to step up production, minimize losses, increase the salability of their products. Box Binding and Stapling, Garment Hanger, Brush Handle, Chain are a few of the qualities regularly produced by Republic. Large tonnages are shipped to manufacturers of concrete reinforcing specialties, fan guards, plated shelves, racks, and grilles.
- 2. Republic Spring Wire for outstanding performance in

automotive seat and back cushions, furniture, bedding, and mechanical spring applications. Standard High Carbon Spring Wire and MB High Carbon Wire are produced by experts who know and understand both steelmaking and high carbon wire drawing practices. They know spring forming machines and the importance of physicals, finish, cast and size accuracy.

3. Republic Screw, Rivet, and Heading Wires to meet the most exacting demands of modern upsetting, roll threading, and extrusion machines. Republic Wire is specially produced to assure internal soundness and freedom from injurious surface defects. It flows freely. Fills out dies in difficult upsetting operations.

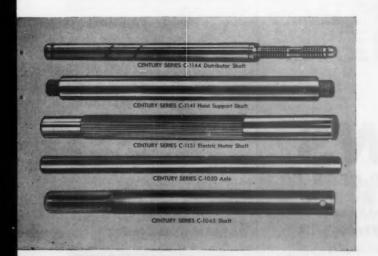
Republic Wire Metallurgists are ready to assist you in selection, application, and processing. They investigate the desired end use—your problems of quality, yet low-cost, quantity production—then suggest a specification to do the job. The coupon is your invitation to use this obligation-free service. Mail it today.



IMAGENUITY IN ALLOY STEEL enabled Convair engineers to increase strength of major structural components in the 880—world's fastest jet airliner. In each 880 pod-pylon, rear engine mount of alloy steel grips and supports the powerful jet engine. Republic Alloy Steels offer exceptionally high strength/weight ratios with the highest strength values. Uniform response to heat treatment assures complete deep hardening penetration, plus hard, wear-resistant surfaces. Send coupon for more facts.

IMAGENUITY IN PIG IRON resulted in the development of ductile iron diesel engine pistons with nearly double the service life of aluminum pistons. Using Republic special low manganese Chateaugay Pig Iron as the base metal, Hunt-Spiller Manufacturing Corporation successfully designed and produced a diesel engine piston with high mechanical strength, minimum weight, maximum wear- and heat-resistance, low ultimate cost. Chateaugay's high total carbon and unusually low phosphorous, silicon, and manganese content suit it perfectly for ductile iron use. Inherently excellent physical properties are maintained in the ductile form assuring strong, flaw-free castings accurate to patterns and shapes. Send coupon for full facts.

IMAGENUITY IN COLD FINISHED STEEL BARS by Republic metallurgists and machining specialists resulted in development of the CENTURY SERIES. A family of five grades of cold finished, specially processed, stress relieved bars having a minimum yield strength of 100,000 psi, the CENTURY SERIES meets the needs of steel parts producers requiring high strength with varying degrees of machinability, and on a descending price scale. Available from Republic in C-1144, C-1141, C-1151, C-1050, C-1045. Mail coupon for your free copy of booklet describing how the CENTURY SERIES can save you time and money in steel parts production.



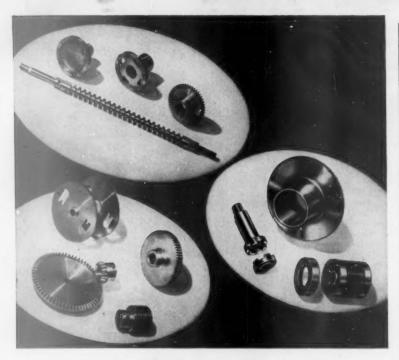




#### REPUBLIC STEEL

World's Widest Range of Standard Steels and Steel Products

REPUBLIC STEEL CORP DEPT. PH-8298-B	
1441 REPUBLIC BUILDING	. CLEVELAND 1, OHIO
☐ Have a Wire Metallurgi	ist call.
Send more information on	12
REPUBLIC WIRE:	CENTURY SERIES
☐ Manufacturers'	☐ Alloy Steel
☐ Spring ☐ Heading	Chateaugay Pig Iron
Name	Title
Company	
Address	



# small and fine pitch gears for precision equipment

No matter how fine your gear requirements — Perkins can solve your problems. Perkins unique custom-gear engineering service, available to your engineering staff prior to the blueprint stage, will... eliminate production headaches... cut excessive costs. This service — recognized by leaders in the radar, electronic and missile fields, and backed by 52 years of custom gear experience — assures the precision quality needed to guarantee trouble-free operation. Don't gamble with gear performance

... Perkins skilled personnel, together with modern up-to-date equipment guarantees fast delivery on prototypes or production runs. Call or write Perkins for complete information on custom-gear engineering and a quotation on your requirements. Then judge for yourself.



Yours on request Folder showing custom gears Perkins has made (from various materials) for aircraft, automotive, precision instruments, home appliances, portable and machine tools, and other products. Includes Perkins facilities for producing various gear types and sizes. Write today.



For More Information Write No. 273 on Place Mark Card—Page 32

#### **Association News**

(Continued from page 188)

it's means of transportation is more diversified and more abundant than anywhere else on earth.

"Only in North America," the shipping executive said, "is the mid-continent the greatest area of resource and production. In all other continents populations have had to cling to the seacoasts and the river valleys that lead to the sea... And now the sea has come to mid-America."

Mr. McCrea said that the tempo of Seaway development has increased until now, in the second year of operation, the intensity of public interest is a physical pressure upon everyone actually identified with Great Lakes trade.

The port executive noted, "In Europe and the Mediterranean the interest is more keen, more informed, more focused and much more determined. If you have not checked for European sources of supply, if you have not considered that your company's eastern competitors have been using foreignmade components for the last ten years and that now you have the opportunity to meet them on an even basis, you haven't been doing your job."

#### New Slate Elected In Rochester

Members of the Purchasing Agents Association of Rochester elected John W. Averill, Stromberg-Carlson, Div. of General Dynamics, president. Mr. Averill takes over from James Conklin, Toledo Scale.

Charles Smail, Shuron-Optical Co., will serve as first vice president; Kurt J. Baum, Labelon Tape Co., as second vice president; and James Doris, Schlegel Mfg. Co., as third vice president. Warren R. Barton, Consolidated-Vacuum Co. is secretary-treasurer.

The board of directors for the coming year will be: James W. Conklin; Harold J. Hummell, American Brake Shoe; Joseph A. Ehrstein, Commercial Controls Corp.; Philip E. Kron, Eastman Kodak Co.; and Walter H. May, Rochester Germicide Co.

# BETTER MACHINE CONTROL AND LOWER MANUFACTURING COSTS... LEAR, INCORPORATED GETS BOTH WITH STERLING SPEED-TROL!



#### The problem: EFFICIENT BORING MACHINE CONTROL

Because Lear products (stable platforms, autopilots, gyros, pumps, positioners and other electrical and mechanical equipment) necessitate extreme tolerances, boring machines require an efficient method of control. With such control, the peripheral speed of the items being bored matches the optimum cutting speed of the boring tools.

#### The solution: STERLING SPEED-TROL VARIABLE SPEED DRIVES

"The problem was solved by the use of Sterling Speed-Trol Variable Speed Drives. Resulting advantages have been fine and accurate finishing, the elimination of a grinding operation, and savings in the manufacturing costs of these parts. Sterling Speed-Trol units have played an important part in helping Lear, Incorporated maintain production schedules."

**Your production problems, too,** may be solved by the application of Sterling Speed-Trol Variable Speed Drives... providing infinitely variable speeds—in one package at your finger tips—to meet your needs.

## Only STERLING SPEED-TROL provides these features for reliable speed control:

- Positive coordinated control of both pulleys—"no springs."
- Maximum pulley life because:
  - variable pulleys ride on hardened, chrome-plated, precision-ground, keyed shafts;
  - (2) large grease reservoirs provide a film of protecting lubricant.
- Longer belt life...no additional load from spring.
- Greater safety...no injuries from spring flying loose during maintenance.

For additional information about the unique advantages of STERLING SPEED-TROL, ask for your free copy of Bulletin 195A. Write to:



Offices and stocks in all principal cities. Over 400 distributors throughout the country to serve you.

5401 TELEGRAPH ROAD . LOS ANGELES 22, CALIFORNIA

For More Information Write No. 274 on Place Mark Card—Page 32

## Only ultrasonic "eyes" can see inside plastics

In most cases, internal flaws in plastic shapes don't show up until it's too late . . . until an insulator cracks or a critical bearing fails. You can prevent this by buying only plastics of known internal quality and uniformity.

Ultrasonic testing, a new, exclusive Polymer quality control, is one guarantee of this uniformity.





Polymer's ultrasonic testing device quickly detects voids and internal flaws which ordinarily would pass even the closest inspection.

That's why, when you specify Polypenco, you can be sure you get plastic shapes with constant electrical and physical properties so necessary for end-product reliability and efficient, waste-saving production.

Unmatched Polypenco quality and engineering services are nationwide. Call or write today for fast delivery or help when you need it.

- ... NYLON-rod, tubing, tubular bar, strip, plate, disc
- TEFLON\*\*-rod, tubing, spaghetti tubing, tape, sheet, thin wall tubing
- NYLAFLOW®-Flexible Nylon Pressure Tubing
- Q-200.5 Cross-Linked Polystyrene-rod and plate
- ... K-51 Chlorinated Polyether-rod, tubular bar, strip
- ... Polycarbonate resin-rod, plate, disc, tubing
- **NYLATRON® GS Nylon Molding Powders**
- NYLASINT® Finely Divided Nylon cold pressed and sintered parts
- . . FLUOROSINT\* TFE fluorocarbon mill shapes and molded parts
- ... CORVEL® Fusion Bond Finishes
- ... WHIRLCLAD\* Coating System
- Trademark of The Polymer Corporation
   DuPont Trademark

#### The Polymer Corporation · Reading, Pa.





# When towels come one at a time they all get used



NEW Steiner Serva-Matic dispenser delivers one unfolded paper towel at a time. No buttons, cranks, levers or tear off required. A few seconds will elapse before the next towel comes out of this Steiner automatic dispenser. Means the first towel will be used before the second can be taken. When this happens every time someone dries his hands you can see the result: Fewer towels are used . . . waste is reduced . . . towel costs go down (as much as 30%). All Steiner cabinets have an adjustable control you can set to dispense towels at the rate you want . . . at the best rate to keep washroom traffic moving and to keep employees and customers satisfied. For details write . . .



#### STEINER COMPANY

Dept. 60-5, 740 Rush Street

Chicago 11. Illinois

For More Information Write No. 276 on Place Mark Card-Page 32

#### Industry



The first Cincinnati plant for custom and contract aerosol filling is now in operation. It is the Cincinnati Aerosol Corp., located at 125 Terrace Drive, the only company in the southwestern Ohio area for the loading of liquid, foam, and paste-type aerosols.

The initial production facilities are capable of filling 432,000 units per week. These will be used for insecticides, spray paints, tire cleaners, car polishes, deodorizers, hair sprays, paste products, etc.

The Crane Co., Chicago, has purchased the fixed assets and inventory of the General Air Conditioning Corporation of Los Angeles, Calif. General Air Conditioning manufactures heat pumps, reverse cycle air conditioners and kitchen equipment. Present sales and service to customers will be maintained through General Air Conditioning's national distribution system.

The company will be operated as a division of Crane's Plumbing-Heating-Air Conditioning Group, which is headquartered in Johnstown, Pennsylvania.

Crown Zellerbach Corporation will consolidate its Kansas City and St. Louis flexible packaging operations in a new plant to be constructed at Hazelwood, Mo., near the St. Louis airport. The plant will be located on a 27-acre site, with an additional 18 acres under option for possible future expansion.

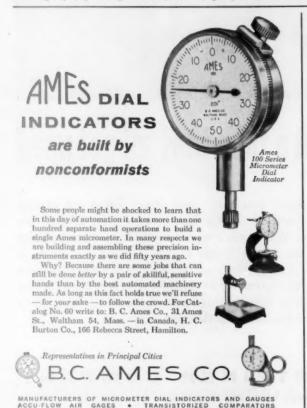
Site preparation for the new plant is now under way. As a production outlet of the company's Western-Waxide division,

> SKINNER 4-way solenoid

the new 245,000-square foot facility will be the company's largest flexible packaging plant when completed by mid-1961. When in full operation. it will employ 450 persons.

The Black and Decker Manufacturing Company and American Machine & Foundry Company have announced that the entire capital stock of DeWalt, Inc. of Lancaster, Pennsylvania, a wholly-owned subsidiary of American Machine & Foundry, is to be transferred to Black & Decker in exchange for 120,000 shares of the Black & Decker stock.

DeWalt "Power Shop" saws for the home workshop and its industrial radial saws will be combined with Black & Decker's line of portable power tools. DeWalt, Incorporated will be operated as an independent subsidiary of Black and Decker. Policies and method of distribution will not be changed, and the manufacturing, research and engineering operations will continue at the Lancaster, Pennsylvania plant.



For More Information Write No. 303 on Place Mark Card-Page 32



For More Information Write No. 304 on Place Mark Card—Page 32



It seals in the sparkle of your favorite soft drink. It makes your beer chill faster, takes less space in your cooler. It guards the flavors of your favorite foods. With hundreds of other products, from oil and paint to detergents and shaving cream, tin cans and closures provide strong, safe, lightweight, unbreakable convenience for you. Tin plate for tin cans is another miracle of steel—another leading product of Youngstown, a growing force in steel.

WYOUNGSTOWN STEEL is quality tin plate. For right through final close visual inspection, Youngstown controls not only basic steel quality, but tin plate quality itself. You can get the temper and gauge you want from two modern full range Youngstown tin mills at strategic Indiana Harbor. Here, Youngstown's new continuous annealing facilities and new coil finishing capacity help deliver cost-cutting answers to your tin "pack" needs. For quality tin plate, count on Youngstown, a growing force in steel.



Youngstown - growing force in steel



THE YOUNGSTOWN SHEET AND TUBE COMPANY, YOUNGSTOWN, OHIO. ATLANTA BOSTON BUFFALO CHICAGO CINCINNATI CLEVELAND COLUMBUS DALLAS DENVER DES MOINES DETROIT GRAND RAPIDS HOUSTON INDIANAPOLIS KANSAS CITY LOS ANGELES MILWAUKEE MINNEAPOLIS NEW ORLEANS NEW YORK PHILADELPHIA PITTSBURGH ST. LOUIS SAN FRANCISCO SEATTLE TULSA WASHINGTON

Now, the first "quick open" package for insulation products...

# "K&M" TEAR-TAPE CARTON

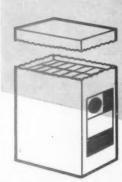
Opens neat and easy...like a coffee can lid!

Easy does it . . . with the new "K&M" "Tear-Tape" Carton. Just pull the tab on the front panel. The top of the carton comes off cleanly and easily. No strain! No stress! No time and energy wasted! Your "K&M" KaytherM Block Insulation is open and ready to use in seconds.

Keep an eye on K&M! This dramatic new development in packaging is only one of a stream of exciting ideas on new products and customer service pouring out of K&M! Write today for more information on the new "Tear-Tape" Carton to: Keasbey & Mattison Company, Ambler, Pa. Dept. I-170.

- · Pull tab.
- . Strip of board peets off like band of tin around top of coffee can.
- . Whole lid lifts off for easy access to "K&M" KaytherM Block Insulation.





Keasbey
Mattison
at Ambler

For More Information Write No. 279 on Place Mark Card-Page 32

For More Information about ad on facing page Write No. 280 on Place Mark Card—pg. 32→ PURCHASING

## GAYLORD SETS THE STAGE FOR SMOOTH AUTOMATIC PACKAGING

Plan a happy ending for your automatic packaging. Buy containers that fit your machinery precisely, flow through your lines without a stumble or a fluff.

Gaylord produces such containers, with letter-perfect precision, in any number you need. Get the whole story from your Gaylord Man. He'll turn in an award-winning performance.





CROWN ZELLERBACH CORPORATION
GAYLORD CONTAINER DIVISION



IN CANADA - CROWN ZELLERBACH CANADA. LTD. VANCOUVER. B. C.

HEADQUARTERS. ST. LOUIS PLANTS COAST TO COAST

# FELT

BY FELTERS

Can Improve Product

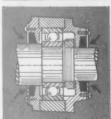
# SEALING and LUBRICATION



Dufeit is a laminated combination of Felters' felt and Hycar; and is recommended for sealing of lighter oils when no head exists. Seals and lubricates at the same time; and offers improvements over other materials.



Felt is an ideal wicking and lubricating material which can be designed into special assemblies like this distributor cam shown here. Lubrication is constant, wear reduced, and felt can be shaped to cover all required areas.



Lifetime bearing lubrication is now possible by selection of correct SAE grade, and designing into sealed bearing. Felt filters out contamination and works as combined reservoir and wick, directing oil flow to required areas.



Mechanical felt seals permit a close seal without undue pressure. Felt can be water-proofed and provides superior grease and oil retaining and dust, dirt and grit exclusion.

To help you get the most out of FELT, send for the Felters' Design Book. Write, today.

Ask for FELT from...
The FELTER S Co.

239 SOUTH STREET
BOSTON 11, MASSACHUSETTS

Pioneer Producers of Felt and Synthetic Non-Woven Fabrics

For More Information Write No. 281 on Place Mark Card-Page 32

#### Industry



A new \$6½ million plant for the manufacture of organic bonded grinding wheels was unveiled by the Norton Company, Worcester, Mass., abrasive products maker, at the opening of its 75th anniversary celebration.

The new production plant, known as Plant 8. was built to provide additional capacity for the making of resinoid, rubber and shellac bonded grinding wheels. Steady growth in the use of these products had caused overcrowding in existing manufacturing areas.

Two St. Louis manufacturing companies, Emerson Electric Manufacturing Company and Day-Brite Lighting, Inc., have joined forces. Under the agreement, both companies will retain their present identity, management, personnel, products and plants. Day-Brite will become a subsidiary of Emerson Electric.

Emerson Electric has current sales of about \$105 million a year and employs about 7,000 persons in nine plants. About two-thirds of its sales are from its commercial business, principally fractional horsepower electric motors and cooling and heating appliances for home and commercial establishments. The other third of its business is the development and production of advanced electronic devices and systems for the military services.

Day-Brite is the largest manufacturer of lighting fixtures for the commercial and industrial field. Its sales in 1959 were \$21.2 million. It employs about 900 persons in three plants—St. Louis, Santa Clara, Calif., and Tupelo, Miss

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PURCHASING

Aluminum being extruded on one of the presses at our Terre Haute, Indiana, plant. For information about all our facilities and products, write for booklet, "Anaconda Aluminum Mill Products".

ANACONDA: a respected name, and now a vigorous force in aluminum extrusions

When buying aluminum for your product ...

PIG - INGOT - SHEET - PLATE - TUBE - PIPE - ROD - BAR - EXTRUSIONS -PLAIN AND LAMINATED FOIL

check with ...



ANACONDA ALUMINUM COMPANY . GENERAL OFFICES, LOUISVILLE 1, KENTUCKY

#### Industry

Bay State Abrasive Products Company, Westboro, Mass., has purchased the Felker Manufacturing Company of Torrance, Calif. Felker is a manufacturer of diamond abrasive cutting wheels used in the construction, marble and granite, building, ceramic, lapidary, and electronic industries.

The Felker Company will be operated as a wholly owned subsidiary of Bay State. It has 120 employees and 500 national distributors. No immediate changes are planned in its operation.

The Eisler Transformer Company, Inc., Dover, N. J. has acquired all assets of the Harrison Transformer Company of Springfield, N. J. With this acquisition and more modern equipment including a large railroad siding, impulse testing equipment, several cranes and a sheet metal shop, Eisler will produce up to 2500 KVA transformers in the near future.



A new ball- and roller-bearing plant for the Link-Belt Co., Indianapolis, Ind., features electronically controlled machine tools, automatic feed devices, and a completely integrated material handling system to take most of the manual labor out of bearing manufacture.

The new plant will house engineering, research, and sales staffs, as well as manufacturing facilities. It will have 50% greater capacity than the plant it replaces.

The Clary Corporation has sold its adding machine and cash register division to the Sperry Rand Corporation, Remington Rand Division. The sale will become effective on July 1.

The transaction will add lines of full keyboard adding machines and registers which were not formerly in the Remington Rand product list. Included in the sale will be all physical assets of Clary's manufacturing plant in Searcy, Arkansas.

Clary personnel engaged in manufacturing, sales and service of adding machines and cash registers, will be retained by Remington Rand. Clary adding machines and registers will continue to be sold under the Clary name by the present Clary dealers and other Clary sales outlets.

H. K. Porter Company, Inc., Pittsburgh, Pa., has acquired the Allied Paint Manufacturing Company, Tulsa, Okla. The twenty-one year old Tulsa firm manufactures residential and industrial maintenance paints sold through dealers in eight Middle West and Southwest states. On June 1, Allied will become the Tulsa works of the paint division of Porter.

# Let SUN SHIP solve your machine problem

When you need machine work or specially built machinery of any kind, you'll find Sun Ship qualified to do the job exactly to your specifications. We have machine tools of every size, and the facilities and skills born of long experience.

When you have a machining problem, write or phone

SALES ENGINEERING DEPARTMENT

Sun

SHIPBUILDING & DRY DOCK COMPANY CHESTER, PA.

For More Information Write No. 286 on Place Mark Card-Page 32

## **ALL the EQUIPMENT YOU NEED**

for IN-PLANT HANDLING and WARE-HOUSING



This handy reference describes Lewis-Shepard's complete line of "manually-operated," "intermediate" and "all-electric" equipment. Here is everything you need for a fully-integrated materials handling system. Write today for your free copy of L-S Condensed Catalog 80-204.

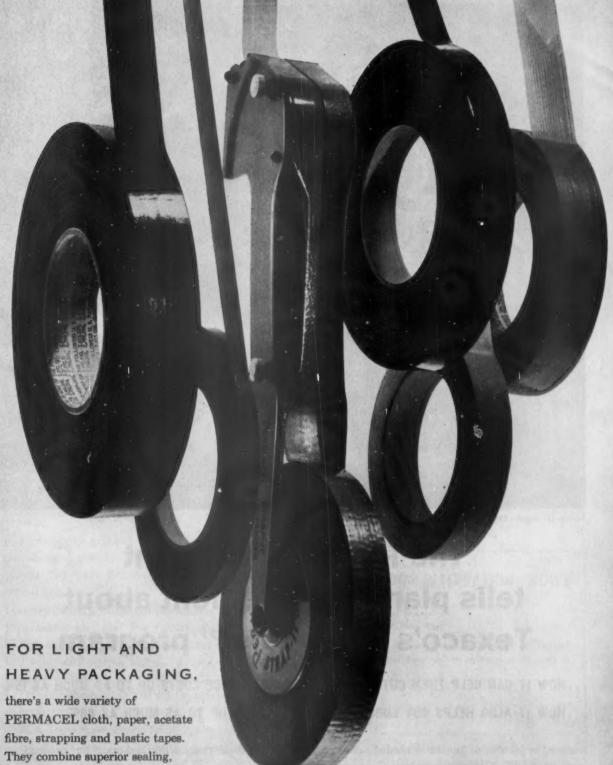


For More Information Write No. 287 on Place Mark Card—Page 32

For More Information about ad on facing page

Write No. 284 on Place Mark Card—page 32→

PURCHASING



holding and protecting characteristics for easy, secure packaging of every type.

TAPES FOR EVERY PURPOSE

RMACEL



Texaco Lubrication Engineer

**Purchasing Agent** 

# The Purchasing Agent tells plant management about Texaco's "Stop Loss" program

...HOW IT CAN HELP THEM CUT PLANT-WIDE MAINTENANCE COSTS UP TO AS MUCH AS 15%
...HOW IT ALSO HELPS CUT LUBRICANT BUYING COSTS UP TO AS MUCH AS 80%

Reduce the number of lubricants needed—perhaps by as much as 50%. Consolidate buying. Cut paperwork. Secure better inventory control.

How? Through Texaco's "Stop Loss" Program. It's specifically designed to modernize your plant's lubrication practices. Bring those practices in line with

today's efficient production and marketing procedures.

Hundreds of purchasing men have used this Program to reduce lubricant buying costs drastically while achieving simpler, more efficient lubrication systems for their firms.

The Program is complete, and particularly adaptable



**Production Superintendent** 

Maintenance Foreman

Plant Manager

to Purchasing's point-of-view. Included are informative movies, coordinated booklets — even a record system that takes the guesswork out of lubrication scheduling.

Investigate the possibilities of initiating a "Stop Loss" Program for your firm. For a dramatic demonstration of how this program can cut costs, see Texaco's new full-color-and-sound movie, "Stop Loss Through Organized Lubrication." To arrange for an early showing at your plant, fill in and mail the attached coupon today.

TUNE IN: Texaco Huntley-Brinkley Report, Mon. through Fri.-NBC-TV



Canada · Latin America · West Africa

#### MAKE YOUR RESERVATION NOW!

TEXACO INC., Dept. P-10 135 East 42nd Street New York 17, New York

I would like to see "Stop Loss Through Organized Lubrication." Please call to arrange a showing in my plant.

Name	Title	
Firm	- 10 10 53 - 10	
Address		
City	ZoneState_	

LUBRICATION IS A MAJOR FACTOR IN COST CONTROL

For More Information Write No. 285 on Place Mark Card-Page 32

## ALTENAPIA.

# **Immediate Shipment**

STOCKS of



# STAINLESS STEEL FASTENERS

AN-MS-COMMERCIAL



Your order, Jarge or small, filled "fast" from the world's largest stock of stainless steel fasteners. AN, MS, Commercial specifications in stock. Rigid quality control, mass production economies. Special stainless steel fasteners also manufactured to your exact requirements on extremely short notice. Just send blueprint or specs for quotation. Full range of raw material, on hand, assures prompt service.



#### WRITE . WIRE . PHONE

FOR QUOTATION OR SHIPMENT ASK FOR CATALOG

#### ALLMETAL

Screw Products Company, Inc.
MANUFACTURERS OF STAINLESS FASTENERS SINCE 1929

821 Stewart Avenue, Garden City, L.I., N.Y.
Phone: Ploneer 1-1200 TWX GCY 603

Midwest Division
6424 W. Belmont Avenue, Chicago 34, Illinois
Phone: AVenue 2-3232 TWX CG 3185

West Coast Division — Office and Warehouse 5822 West Washington Blvd., Culver City, Calif. Phone: WEbster 3-9595 — TWX LA 1472

For More Information Write No. 283 on Place Mark Card—Page 32

#### **Book Reviews**

#### Managerial Skills for Supervisors

By Glenn Gardiner and Associates Elliott Service Company, Mount Vernon, N. Y. \$3.95

Individual self-development is the prime purpose of this newlypublished book. It presents comprehensive studies of 12 managerial skills. They include: managing your time; decision making; communications; talking effectively; selling your ideas; exercising authority; and developing people. This book was planned for use in a number of different ways. Factory and office personnel, for instance, will both receive great help in achieving supervisory abilities. It can also be used as a text for company programs. (A companion manual is available for the executive discussion leader.) A book of this kind, unfortunately, struggles under the handicap that many people do not have the drive or desire for self-improvement, despite loud arguments to the contrary. The authors have used a significant quotation from the Monthly Letter of the Royal Bank of Canada which proves the point and serves to separate the supervisors from the clerks: "The great hindrance to study is the sense of 'I have no time.' Everyone has all the time there is, and the excuse means simply that study for advancement is not considered so important as some other time-user."

#### **Handbook of Public Relations**

Edited by Howard Stephenson McGraw-Hill \$12.50

Twenty-nine specialists have collaborated on this 875 page handbook. The book covers every phase of public relations—planning policies, setting budgets, appraising results, managing the staff, using research and psychology, counseling, and others. It shows how to successfully influence public opinion through newspapers, magazines, radio, television, and all other media.

From integrating public rela-

tions with promotion, merchandising, advertising, and sales, to creating product, institutional, and personality publicity; from making public relations serve top management, to adapting public relations to the needs of the small business; here is well-rounded coverage of the entire field, based on today's best accepted thinking and practice.

While public relations is not directly related to purchasing, the purchasing executive may be interested in this book for two reasons: (1) He is involved in public relations a great deal whether he wants to be or not since he has regular contacts with hundreds or even thousands of suppliers; and (2) if he is an active N. A. P. A. member, he may find the book useful in providing tips on getting publicity for his Association.

### Executive Decisions and Operations Research

By David W. Miller and Martin K. Starr Prentice-Hall \$10.00

Operations research is one of the newest approaches to scientific management. It is discussed in terms of decision theory in this book. The authors have written the book for students of management, not for mathematicians. Although the material is necessarily concerned with mathematics, only a knowledge of basic algebra and some acquaintance with economic concepts is required to master it. The book is divided into four major parts: The Executive and Decisions, Operations Research and Decisions, Decision Problem Paradigms, and The Executive and Operations Research.

Purchasing executives will be particularly interested in discussions of administrative and production problems in operations research. Although only a handful of companies have successfully applied operations research techniques to their purchasing operations, there is no doubt many more will do so in the future. The P. A. who wants to keep on top of his job can't afford to be ignorant of operations research; this book can help him.

For Mare Information about ad on facing page Write No. 288 on Place Mark Card—page 32→ PURCHASING



# New Roebling Wide Width Tempered Spring Steel makes the most of a good thing ... (your money, for instance!)

You count your profits in the number of holes in your scrap. And spring steel that doesn't measure up to the most good parts per inch just isn't the right steel for you.

That's why everybody's talking about new Roebling tempered, cold rolled spring steel. Comes in *any* width up to a full handspan wide. 8\% inches, that is, by .005 to .062 inches thick. Think how use-

ful that unique extra width can be in getting extra blanks from a length of steel! The thickness is consistent, too.

Now pick a finish – any finish – blued, straw, or bright – plain or ground, Roebling's got it. Buy Roebling Cold Rolled Spring Steel and you get uniform excellence in temper and finish. Delivery? No problem at all. Get full facts and figures by writing Roebling's Wire and Cold Rolled Steel Products Division, Trenton 2, New Jersey.

ROEBLING

Branch Offices in Principal Cities John A. Roebling's Sons Division The Colorado Fuel and Iron Corporation





## "Special Charts are a GC specialty"

"Several of our processes call for recording charts of special design. I've found that GC tops the field on these just as on standard items."

Do your technicians need specially-designed recording charts for particular, individual applications? GC has the diversified skills necessary to design custom charts expertly, produce them accurately and economically, and deliver them in the shortest time.

Yes, special charts are a GC specialty. And, for your ordinary stock chart requirements, you'll find more than 5,000 users to vouch for GC's extraordinary service and economy.

GC maintains a catalog selection of over 15,000 different types of circular, strip and rectangular recording charts. You get fast shipments—save time and clerical work by dealing with one supplier instead of many—and cut costs further because of the economies of GC's large quantity production.

Write for the complete GC Stock List. Name specific instruments and we'll include samples for your technicians to test in use.



DISTRIBUTED BY:

## TECHNICAL SALES CORPORATION

189 Van Rensselaer St., Buffalo 10, N. Y.

A SUBSIDIARY OF:

GRAPHIC CONTROLS CORPORATION
Buffalo 10, New York

For More Information Write No. 277 on Place Mark Card—Page 32

#### How Purchasing Uses Teamwork to Save

(Continued from page 97)

This would eliminate the need for photographs and cut down on art time. It helped, but not enough. Therefore, we tried looking at it another way.

Why not try Velox photos? Then we could use line plates instead of halftones. But would the color reproduce well in black & white? We made test shots and submitted them to the printer for approval, Result: Quality was excellent.

This threw the paste-up back into the art department. If the art director had been looking at his cost alone he would have screamed to high heaven. But—on the basis of the overall job, our printing saving was twice our extra expenditure for art.

Meanwhile, a size was selected to fit press and paper without waste. Paper was ordered from mill shipment instead of out of warehouse stock, with time to shop around and get a better price. Envelopes were drawn from stock and addressed in advance.

When the job was completed, a week was cut from the production schedule. Delivery was made without overtime charges. And we saved at least \$1,200 over the old method.

The same formula can be applied to forms, stationery, envelopes, or anything else we buy. It's simply this: Question the entire concept, not just the individual purchase.

Of course, there is sometimes opposition from the other departments when purchasing questions a requisition. It looks like we're sticking our nose into other people's business. So you've got to be tactful.

We've found two ways to get cooperation. First, prove that you can get what they want when they want it. And quit crying about every rush job. Other people have

Be sure to read
"PURCHASING PLANS
FOR PROFIT"

In the August 1st Issue

problems too. Get the goods—that's purchasing's job. Nothing builds confidence like performance.

And second, give credit where credit is due. It's rare to be complimented, isn't it? Well, try it on the other fellow. When we made a saving, we send a note to the person involved with a copy to his boss.

This note usually includes a sentence like this: Thank you for enabling us to make a cost reduction of \$ It also includes the details of how it was done. Always remember, it was his idea.

With this procedure, you'll spend a lot less time educating other departments about the importance of purchasing. You'll be too busy helping them reduce costs.

#### N.A.P.A. Convention Follow-up

(Continued from page 101)

must be conceded that intangibles play an important part.

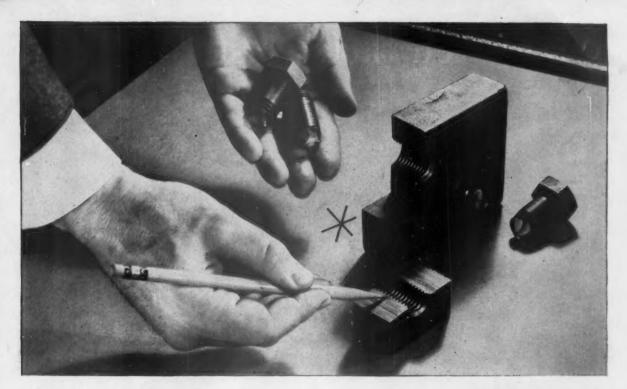
Now purchasing may appear somewhat prosaic when compared with the kaleidoscopic circulatory freedom of selling, but it should not come as any surprise that intangibles also register heavily in career purchasing.

Organized activity demands executive leadership, and certainly purchasing is no exception. The ability to get things done within a stipulated time, even when, as in most instances, they must be done through people outside one's own organization, calls for high caliber executive ability. Couple this with the necessity of extracting from many diverse opinions, an acceptable token of unanimity in the conception of the need and the P. A.'s task assumes its managerial aspect.

#### Must Communicate Clearly

But we are not out of our own front yard yet; this need must be expressed in language and terms depicted by pictures or drawings, so that its communication to the market-place will possess sufficient clarity. Throughout the whole, the P.A. must weave the

(Please turn to page 212)



# Showed way to save \$7800

RB&W fastener survey of refrigeration unit suggested that hex screws be substituted for studs ... and castings be tapped with less costly clearance fit.

When there are no special design requirements or space clearance conditions, using studs of 1-inch diameter and smaller often penalizes the user needlessly. First, in direct costs, since the more economical hex screws will do the job. Second, in production costs, since studs require holes tapped with an expensive interference thread fit.

The RB&W Man pointed this out when his survey revealed over 250 stud fastenings per refrigeration unit. For this application, 250 hex screws cost \$8.45... for a saving of better than \$22 over the studs and nuts. Annually this would total to \$7800... clear profit. And on top of this, reduced tapping costs, too.

Want to get the most from your fastener dollars? Ask for an RB&W man to make a survey. Contact Russell, Burdsall & Ward Bolt and Nut Company, Port Chester, N. Y.

Specifying stude for fear that hex screws might damage castings during disassemblies is based on a groundless fear. Hex screws in threaded holes with clearance fit can be reused repeatedly without damaging the casting. In the test casting shown above, the hex screws were first tightened and removed 50 times—then torqued to breaking point. Cutaway section showed casting threads were still perfect, with no sign of stripping.

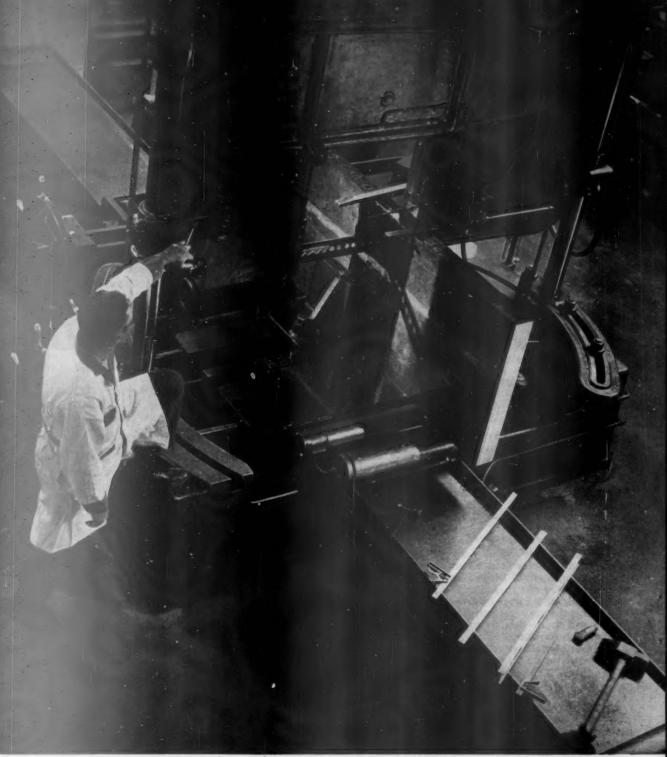
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Plants at: Port Chester, N. Y.; Coraopolis, Pa.; Rock Falls, Ill.; Los Angeles, Calif. Additional seles afficaat: Ardmere (Phile.), Pa.; Pittsburgh; Detroit; Chicogo; Dallas; San Francisco. Sales agents at: Cloveland, Milwaukee; New Orleans; Denver, Fargo. Distributors from coest to coest.

For More Information about ad on following page Write No. 291 on Place Mark Card - pg. 32->

# integrated CRUCIBLE steel service



The customer needed plastic mold steel cut to his specs as fast as he could get it. The Crucible warehouse confirmed his order, gave him immediate deliv-

ery because it had both the steel and the saw (big 24" x 42" hacksaws which can slice a 40" block in 4-41/2 hours).

# maintains a variety of local facilities for handling customers' special requirements

"We regularly rely on the Crucible warehouse's equipment. Why, it would take us all day to cut steels they can cut in minutes. We've tried to do these cutting jobs ourselves and, frankly, we lose money nearly every time."

This purchasing agent's words are probably typical because countless companies, all over the country, rely on the 31 local Crucible warehouses for handling their special needs. Unusual cutting of specialty steel grades and sizes is just an example. Or, if a warehouse can't handle extras, such as forging, grinding, machining, boring, polishing, etc. itself, it arranges to have them done conveniently and economically outside.

It's entirely possible that your plant has these facilities. Even so, it can pay you to find out what the local Crucible warehouse has to offer. As one materials buyer put it:

"We have a 'get to know the suppliers' policy. I've visited the Crucible warehouse personally and made a list of its equipment. Here it is—under 'Suppliers' Facilities.' Two weeks ago, when all our saws were tied up, we had the Crucible warehouse cut the steels. They did it immediately, so my list paid off."

All Crucible warehouses maintain stocks, services and facilities to serve you. If you'd like to know more about them, phone or visit the warehouse nearest you—any time. Its facilities and services are part of Crucible's integrated operation, from ore to mill and warehouse delivery to you. Crucible Steel Company of America, Dept. PGI3, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.

STOCK LIST

Keeps you up-to-date on local stocks of specialty steels. Just ask the Crucible salesman to place your name on the regular mailing list.

One Source For All These Steels



Customers' Master Files quickly give Inside Account Salesmen details on your receiving schedules and special requirements.



Inside Account Salesmen keep reference sources handy — give you fast breakdowns of analyses, or heat-treating, machining data.

TOOL STEELS—Water, oil, air hardening, shock resisting, hot work, plastic and die casting steels in all forms, including bars, sheets, plates, drill rod, hollow bars, forgings and flat ground stocks

HIGH SPEED STEELS—Crucible's famous "Rex"® steels: Rex Thrift Finish rounds, hot rolled and cold drawn flats and squares, drill rod, forgings, sheets, plates, and tool bits

STAINLESS -STEEL - Bars, sheet, strip, wire, cold heading wire, metalizing wire, plates, angles

FREE MACHINING STEELS - Crucible Max-el® rounds, hexagons, plates and brake die steel

ALLOY STEELS - bars, billets, strip and sheet

COLD ROLLED CARBON SPRING STEELS

DRILL STEELS - Hollow and solid drill steels

ALUMINUM EXTRUSION DIE STEELS

HOLLOW TOOL STEEL

WELDING AND HARD FACING ROD

PLASTIC MOLD STEELS

PERMANENT MAGNETS

- and many others



Fleet of trucks and special delivery vehicles maintained at each warehouse ensure prompt, nearby deliveries.



Full stocks of specialty steels enable warehousemen to ready your order for shipment overnight — or earlier.

#### CRUCIBLE

#### STEEL COMPANY OF AMERICA

Branch Offices and Warehouses: Atlanta 

Baltimore 

Boston 

Buffalo 

Charlotte 

Chicago 

Cincinnati 

Cleveland 

Columbus 

Dallas 

Dayton 

Denver 

Dervoit 

Grand Rapids 

Harrison 

Houston 

Indianapolis 

Kansas City 

Los Angeles 

Milwaukee 

New Haven 

New York 

Philadelphia 

Pittsburgh 

Portland, Ore. 

Providence 

Rockford 

Salt Lake City 

San Francisco 

Seattle 

Springfield, Mass. 

St. Louis 

St. Paul 

Syracuse 

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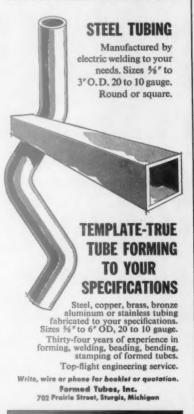


#### 1 Sturgis, Michigan

In heart of metal working industry, Seven large truck line terminals, New York Central and Pennsylvania Railroads,

#### 2. Haleyville, Alabama

Convenient to Birmingham.
On U. S. Highway 278.
Southern and Illinois Central Railroads.





For More Information Write No. 292 on Place Mark Card—Page 32

#### N.A.P.A. Convention Follow-up

(Continued from page 208)

scarlet thread of full legality, thereby establishing stability and responsibility, yet we have but touched on that prime intangible . . . the power of his influence in the realm of inter and intradepartmental co-ordination and co-operation. Clerical, administration, negotiation, buying, expeditinspection, warehousing, material control, production, packaging. safety, accounting, public relations, advertising, etc., etc., all respond to his influence. These must enter transactions in adequate degree and timing dictated by the varying requirements of each, as interpreted and coordinated under the functional point in common . . . purchasing.

The catalyst starts working when the P.A. enters the picture, and really stirs up things both internal and external with his signing of the purchase order. So leadership is an intangible of prime value in "purchasing" . . . it is indispensable to the inspirational co-operation of so many other individuals and units.

No man has a spot in this world except in relationship to those around him. This relationship can be productive of co-operative unity, or it can dissipate under the enervating blight of discord. It is molded by individual action and reaction, particularly as influenced by leadership. Adequacy of leadership is, therefore, a requisite in any group effort. Leadership is not to be computed by the quantity of its didactic directives, manuals or bulletins. Loquaciousness is no substitute for leadership. While these directives may, in the proper circumstances, be considered as working tools, too often they are more in the nature of sparks, ricocheting under the friction of rapid business activity, so that they are more expressive of heat than light.

Adequacy of leadership in this or any other human endeavor is measurable by capacity to lead. Chance may catapult you into power, but if you do not have capacity you can never hold the place. Capacity in this instance,

refers to the possession of something deeper than just technical or occupational knowledge.

The P.A.'s delegated authority and normal assignment hands him a needle and a license to stick it into the metaphorical arteries of his principal with every purchase order released to extract some of the life-blood of the enterprise . . . money. Responsibility, deep centered as this, calls for something beyond the mere completion of so much servitude in an educational institution. Formal training in the fundamentals of trade and commerce is a prerequisite, but experience and wisdom spell out the measure of success in the discharge of such responsibility.

#### N.A.P.A. Role in Education

It is a source of much satisfaction to appraise N.A.P.A.'s valuable educational efforts in training young people in the principles of career purchasing. This has only been possible by continuous unstinted service and unselfish sacrifice of time on the part of hundreds of purchasing excutives throughout the nation. It has been a distinct, though unheralded public service.

Recently the objective has been to establish such training within regular academic curricula at the various levels, commencing with junior college and proceeding through the full-course universities. This is, in my opinion, sound strategy, being of great benefit to students, employers and society in general. All consumers benefit from sound purchasing techniques, and all levels of society, including the individual taxpayers, are concerned in better values for money expended.

In continuing as a group to foster this training within scholastic institutions, we expose the students to this basic information and knowledge at the period in their lives when it is assimulated and evaluated for direction in determining whether or not to select career purchasing as their vocational field. With the entrance of trained individuals into purchasing organizations, there will be less actual need for N.A.P.A. and its affiliates to initiate or sustain

(Please turn to page 214)
For More Information about ad on facing page
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PURCHASING



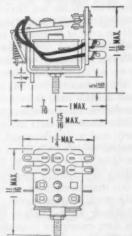
## three for dependability at low cost

MEET P&B's FAMILY OF "K SERIES" RELAYS

Here are only three of a large family of "K Series" relays by P&B. Blood brothers all, they are distinguished by fine craftsmanship and design maturity. Together they will handle a multitude of switching requirements.

Many design engineers find it saves time, saves money to integrate their circuits with related P&B relays. Makes sense, doesn't it?

- KR—A small, lightweight relay used widely in communications and automation. Engineered for long life and dependability. 3PDT max. AC or DC. (See engineering data.)
- KT—Designed for antenna switching. Capacitance: 0.5 mmfds between contacts. Terminal board is glass melamine and stack insulation is glass silicone for minimum RF losses to switch 300 ohm antenna line. 3 PDT max. AC or DC.
- KC-Low cost plate circuit relay with sensitivity of 125 mw per pole. Factory adjusted to pull-in on specific current values. Available open, hermetically sealed or in clear plastic dust cover with standard octal-type plug. 3 PDT max. DC.



#### KR ENGINEERING DATA

GENERAL:

Breakdown Voltage: 500 volts rms minimum between all elements.

mperature Range: DC Coils—45°C to 85°C. AC Coils—45°C to 70°C.

Terminals:
Piarced solder lugs standard, Octal 8 and 11 pin plug-in headers available.

**Enclosures:** Type K—Hermetically sealed.

Type P clear cellulose acetate dust cover.

CONTACTS:
Arrangements: 3 Form C (3PDT) max.
Arrangements: 3 Form C (3PDT) max.
Meterial: ½" dia, fine silver (gold plated).
Other materials available to increase contact capacity.

nee: 16,500 ohms max. AC or DC.

Power: 1.1 watts minimum to 4 watts maximum for DC at 25°C ambient.

Duty: Continuous.
Insulation: Centrifically impregnated with insulating varnish,

PAB STANDARD RELAYS ARE AVAILABLE AT YOUR LOCAL ELECTRONIC PARTS DISTRIBUTOR



DIVISION OF AMERICAN MACHINE & FOUNDRY COMPANY, PRINCETON, INDIANA

IN CANADA: POTTER & BRUMFIELD CANADA LTD., GUELPH, ONTARIO



# Specialty Wire... our cup of tea

<u>Problem:</u> Staple the tea bag to the string and the string to the trademark tab. Make the attachment tear-proof and keep stapling machines running smoothly. Meet strict Government regulations envolving cleanliness of wire, metallic content and corrosion factors.

Answer: Call Prentiss. This major tea firm did. Now, "being in hot water" is no problem at all. Write, call or wite: Prentiss Works, Riverside-Alloy Metal Division, H. K. Porter Company, Inc., Holyoke, Mass.

RIVERSIDE-ALLOY METAL DIVISION



H. K. PORTER COMPANY, INC.

PORTER SERVES INDUSTRY with steel, rubber and friction products, asbestos textiles, high voltage electrical equipment, electrical wire and cable, wiring systems, motors, fans, blowers, specialty alloys, paints, refractories, tools, forgings and pipe fittings, roll formings and stampings, wire rope and strand.

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#### N.A.P.A. Convention Follow-up

(Continued from page 212)

elementary educational programs. Released from concern with the elementary mechanics of the function, which should and in the future will be indoctrinated in the schools, N.A.P.A. programming can, with adequate budgetary support, be more realistically slanted to the welfare and prestige of those already shouldering heavy purchasing responsibilities.

#### **Don't Want Batboys**

Factual digests of politicoeconomic trends competently prepared and regularly distributed as a professional service to members, would be a beneficial substitute. At the present stage, any action, governmental or economic. which delves into the finances from which purchasing agents withdraw cash to honor commitments, is of immediate concern to both their principals and themselves. By naively ignoring such actions, we classify as economic bat boys instead of hard-hitting sluggers at the plate where the score is made.

Discussion and digests of topics of current importance would provide a strong stimulus to our professional status and enable more purchasing agents to contribute appreciably to managerial policy planning. Our strong support of formal education has already been demonstrated, the rational objective now is to keep it where it really belongs . . . in schools and colleges. Certainly we can profit by an occasional refresher course in the elements, but because we need a little salt, does not imply our desire for immersion in brine.

Education is not an acquirement, but a development, a progression which unfolds as long as life lasts. We can aid in this unfolding by mature presentations to our membership on a sustained scale, with subject matter, and in a manner calculated to expand that firm executive intangible . . . capacity.

One of the measures of capacity is usefulness to others. How useful are you in your purchasing performance, in the getting more value into your product or services for the benefit of your consumers? How useful are you to management in the development, presentation and observance of sound business ethics which foster honesty and fair-dealing in your industry?

How useful are you in expressing by action as well as by words, adherence to principles of equity and square dealing? These make for morale building wherever your influence is felt. These are intangible contributions of tangible return.

Capacity as it pertains to the purchasing executive, embraces another intangible . . . prudence. A prudent man weighs and acts not only on his own isolated experience, but pools it by the solicitation of sound counsel so that all his decisions have a broader base. The imprudent man spurns counsel and rushes headlong into action more from glandular reaction than mental consideration. The prudent man profits from his past mistakes and the experience of others.

Eighty to ninety percent of a dollar's sale is usually expended in the cost of doing business. So a hundred thousand dollar sale, that produces a salary bonus for the jubilant salesman, quite often yields his company treasury only ten thousand dollars! While on the other hand, a prudent P.A. by an action or a decision that reduces the expenditure by a hundred thousand dollars, keeps the entire amount in his company's treasury for investment or availability in other projects.

With an operating ratio of approximately 85%, this saving of a hundred thousand dollars by prosaic prudent purchasing, is equal to the sales wizards' spectacular selling achievement of nearly three-quarters of a million dollars . . . a seven-fold advantage by purchasing. Enlightened managements, therefore, recognize the reality of benefits from prudence in purchasing.

Then there is equity and justice. These are the intangibles which recognize and respect the rights and obligations of others. In business, as in all other facets of human life, the fullness of sat-

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For More Information about ad on facing page
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PURCHASING



- . See how flexible it is
- · It's practically kink-proof
- Wrap it around heavy or irregular shaped loads —and it hangs straight again as soon as you release it
- It lasts longer—can be used over and over again
- · Handles easy for it has the pliability of hemp with the strength of steel

Yes, HI-PLI slings are amazingly pliable. This results from ACCO's arrangement of six ropes laid around one. HI-PLIS also have acco's patented Dualoc endings which double-lock the sling ends. They look good, too, with a clean bright finish which comes from acco's own Galacco coating process.

Each and every HI-PLI sling is factory prooftested at twice its load-carrying capacity to earn an Acco tag and certificate of registration. That means they're safe.

Ask your distributor for HI-PLI slings Or write us at Wilkes-Barre, Pa., for our new Catalog 10 which describes our HI-PLI, Strand-Laid and Braided Slings.

# ACCO Registered®

Wire Rope Sling Department • American Chain & Cable Company, Inc.

Atlanta, Chicago, Denver, Houston, Los Angeles, New York, Odessa, Tex., Philadelphia, Pittsburgh, Portland, Ore., San Francisco, Bridgeport, Conn. • In Canada: Dominion Chain Company, Ltd., Niagara Falls, Ontario



## N.A.P.A. Convention Follow-up

(Continued from page 214)

isfaction to both buyer and seller is wrapped up in the common good. Our actions in dealing must be such that the rights of all are safeguarded. This includes the relationship of agent to principal, seller to customer, employer to employe, supervisor to those supervised.

Leadership is never inspiring or effective where justice and equity are trampled on. You may compress people . . . you never suppress them, whether they are your customers or co-workers . . . so long as they are humans they will be sensitive to any injustice they receive at your hands, just as you do under similar circumstances. As the purchasing executive must have a large segment of leadership in his make-up, a deficiency through ignorance or abandonment of the principle of equity and justice reduces his capacity for continuing successful attainment.

Perseverance, fortitude and courage may be considered together as intangibles which denote capacity in our field. The first is often essential in attaining of any worthwhile objective, while fortitude bespeaks the strength to stand by one's convictions and principles. Courage is a necessity in this vocation, since it frequently demands presentation of issues in an environment where personal interest may suggest silence or pusillanimous acquiescence.

## Time When You Must Speak Out

There is an old latin maxim which means "it is better to bend than to break." The prudent, just individual knows when the matter is of a category where magnanimity and tolerance indicates bending as the wise choice. However, there are times in the lives of men, indeed often in career purchasing, when after analysis, principles demand courage and steadfastness. To do otherwise is to be a mere turnip in the scheme of things . . . better be a street cleaner and keep your self-respect. A courageous man is never

afraid to put his opinion to the test of facts, and a morally sincere man is always ready to surrender to the facts where they are contrary to his opinion.

Perspective play is an important part in any sound decision. This is consideration of a purchasing intangible of extreme worth. Don't lose your sense of proportion or perspective. I have a firm conviction that American trade and commerce, especially the twin elements of purchasing and selling, will in the remainder of this century, fill a vital, unprecedented international role.

#### The Good Business Deal

Adherence to sound principles of life . . . honest value, faithful performance and fulfillment of obligations, and acceptance of responsibility . . . these are the intangibles which purchasing and selling can bring into play in this era of close contact. And these will prove a vital force in shaping of men's minds, by creating impressions of permanent value!

(Please turn to page 220)



**ELECTRIC WELDED** SEAMLESS

# Square & Rectangular



## STEEL TUBING

Available in girths up to 48" and wall thicknesses to 1/2"

Here is quality tubing manufactured especially for the architect and designer. It combines good looks, structural strength and a flexibility of application that makes it ideal for structural columns, stair stringers, canopy supports, etc.

Write today for free catalog.

## C.A. ROBERTS CO. Teel Tube Specialists

Dept. 0-7 · 2401 25th Avenue · Franklin Park, Illinois

Warehouses serving the middlewest CHICAGO . DETROIT . INDIANAPOLIS . ST LOUIS . TULSA . KANSAS CITY

For More Information Write No. 296 on Place Mark Card-Page 32

# FREE

to metalworking management!

## NEW

16-page illustrated booklet

Vapor-from-paper STOPS RUST

Now, you can "mothball" your metal parts or products as easily as your wife protects her woolens. This new booklet tells how Ludlow VPI® Wrap cuts costs in shipping and storage. Read how other companies have saved by



modernizing their preservation methods. It's FREE! Ludlow Papers, Needham Heights, Mass. Dept. 166.

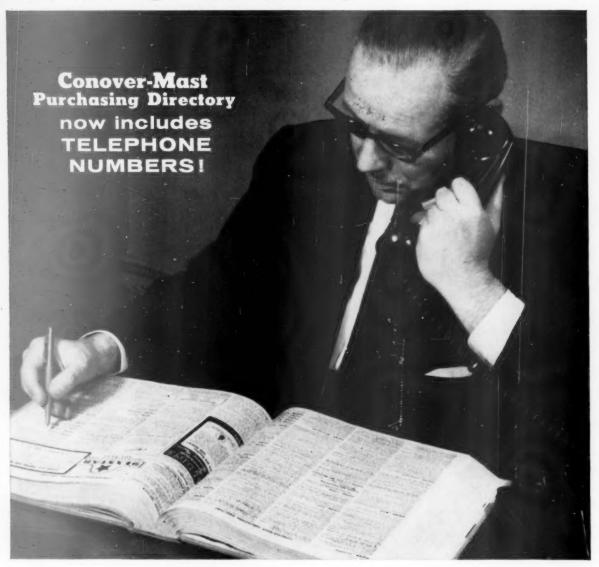
For More Information Write No. 297 on Place Mark Card-Page 32 For More Information about ad on facing page Write No. 298 on Place Mark Card—pg. 32→ PURCHASING



## 100 of the leading gasket fabricators in the business

display this emblem, and one is near you. This network of widely experienced independent suppliers is ready to give prompt delivery of gaskets cut to your specifications. And each Approved Fabricator is backed by the extensive research facilities and manufacturing skills of Armstrong Cork Company, Lancaster, Pennsylvania.

# Time Saving Service for Buyers





Progressive Purchasing and Engineering Executives now use the telephone in buying more than ever before.

Therefore, CONOVER-MAST PURCHASING DIRECTORY has added telephone numbers of companies selling to industry.

In one convenient book you find who makes it, where they are located, and *now* their telephone number.

# Conover-Mast Purchasing Directory

205 E. 42nd Street • MUrray Hill 9-3250 • New York 17, N. Y.



**Steel** is a low-cost material. But when you tie up your money in it, store it, insure it, pay taxes on it, buy equipment to handle it, cut and burn it—you often add unnecessarily to this low cost. And the big question is whether you or your nearby steel service center should perform these functions. The wisest thing to do is to find out.

Each steel user's case is different. Your steel service center will be glad to help you determine the most economical way to buy and use steel by considering all your costs of possession, such as:

Cost of capital: Inventory Space Equipment Cost of operation: Space Materials handling Cutting & burning Scrap & wastage Other costs:
Obsolescence
Insurance
Taxes
Accounting

Call your steel service center, or write for free booklet, "What's Your Real Cost of Possession for Steel?"



## ..YOUR STEEL SERVICE CENTER



STEEL SERVICE CENTER INSTITUTE
540-A Terminal Tower, Cleveland 13, Ohio
For More Information Write No. 299 on Place Mark Card—Page 32

## N.A.P.A. Convention Follow-up

(Continued from page 216)

The only good business deal is one profitable for both parties, any other arrangement is unmoral and breeds distrust and dissatisfaction . . . a domestic and international menace of calamitous potential.

William Benton, publisher of the Encyclopaedia Britannica, as well as many others, advocates a liberal education for business leaders. One which calls for a study of the humanities and requires clear thinking beyond the confines of scientific specialization. He is quoted as saying, "Schools and colleges have a special opportunity to work toward what must be established as the primary aim of American education, producing not highly trained technicians on the Soviet model, but educated individuals on the American model . . . men and women who possess wisdom as well as knowledge; compassion as well as high personal standards, convictions as well as disciplined reasoning; sensitivity to beauty as well as tough-minded ability to distinguish between the genuine and counterfeit; individuality as well as willingness to work together with others towards a common goal."

## **Expand Your Vision**

A world organized along completely scientific lines, in which the affairs of mankind were totally patterned and controlled by mathematicians and physicists, would be a most unhappy place for the human spirit. There must be an atmosphere of free motion and individual choice, in which relationships are not patterned on mere efficient international conformity. A spiritual renaissance which makes possible the exchange of material benefits through unhampered trade conducted with unanimity, will provide this atmosphere. Purchasing and selling executives must quickly expand their vision and prepare to measure up to the challenge and opportunity in this age of the common man.

The remaining period of this

NEED

century offers an opportunity to men of commerce, government and industry, especially to that segment in purchasing and selling, never before possible. Our conduct in commerce needs to confirm the high ideals we verbally express. Full understanding must frame our deeds to enable us to make our full contribution in this critical stage of world his-

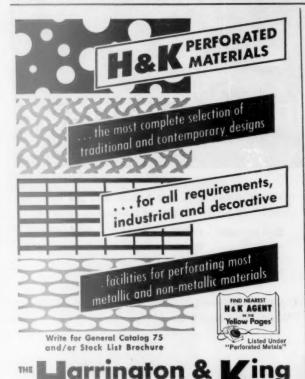
As modern business leaders, as ambassadors in this, America's century of the common man, we have a wider responsibility than merely turning a fast dollar! The recent furore over "payola" and the audience participation programs are but indicative of a new sense of private responsibility of the market-place to public standards and morals. No man has a spot in this world except in relationship to those around him.

The preparation is in your minds, the vision and opportunity within your reach, the determination and accomplishment in your hands! Is your score of intangible strength yet equal to the task?

SPECIAL PULLEYS?

NAGEL-CHASE

CAN HELP!



For More Information Write No. 300 on Place Mark Card-Page 32

New York Office and Warehouse

114 Liberty St., Dept. PC, N.Y.

Chicago Office and Warehouse

5622 Fillmore St., Chicago 44

The NAGEL-CHASE MFG. CO.

When you need FHP V-Belt Pulleys of special design, sulting Nagel-Chase. This company has specialized in FHP pressed steel V-Belt pulleys for more than a ample of many especially designed pulleys Nagel-Chase has engineered for tractors and agricultural equipment. Whenever there's a V-Belt Pulley on your new model or product, be sure to consult Nagel-Chase Write for cost step down pulley designed ted in quantity by Nagel-Chase. etal hub with built-in oil reservoir aal solid metal hub. 2821 No. Ashland Ave. Chicago 13, III.

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Now, all Spang CW Galvanized Steel Pipe carries this new marking which is your assurance of top-quality domestic steel pipe.

## Look for this marking when you buy steel pipe

# It spells two important advantages for you:

1. Pipe made in the United States of America must meet the high product standards set by definite technical specifications established for all pipe manufacturers. When you buy American-made steel pipe, you know you're getting a fine, standard product with good working characteristics and assured long life that will meet specified service requirements.

2. The Spang CW Steel Pipe marking indicates that extra measure of quality. When you buy Spang, you know you're getting a product that's carefully controlled during manufac-

turing and thoroughly tested and inspected before shipping to assure you of a top-quality product, uniform throughout, for fast, economical, trouble-free installations.

Don't take chances by making second-rate installations with questionable foreign imports. It's worth your reputation to buy Steel Pipe made in USA. It pays in the long run!

Look for this Spang marking on your next pipe order. You can't buy a better pipe! Your local Spang Distributor c a n

give you topquality service. Give him a call!





New "Made in USA" marking on Spang CW Galvanized Steel Pipe is applied after pipe has been quick-quenched following galvanizing.

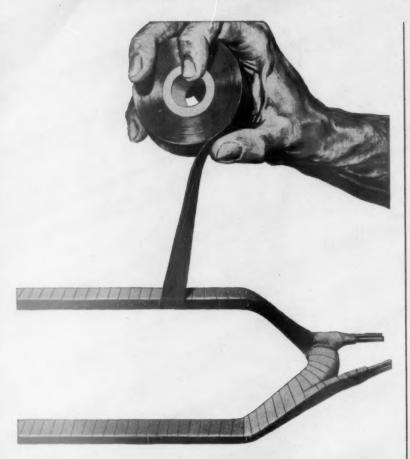


## THE NATIONAL SUPPLY COMPANY

Two Gateway Center, Pittsburgh 22, Pennsylvania

Subsidiary of Armco Steel Corporation





# Elliott Company chooses *Porter* Silicone Tape for mechanical stability and extended motor life!

The Elliott Company, a division of Carrier Corporation, has developed the first really mechanically-adequate silicone insulation system—with "Porter" Silicone Tape. Vulcanized into a void-free homogeneous structure, "Porter" Silicone Tape provides outstanding mechanical and sealing properties for applications requiring class H insulation. In addition to flexibility and moisture protection, the Elliott "Fabri-Lastic" system provides durability and toughness as well as excellent thermal stability at high temperatures.

Thermoid Division offers the widest range of silicone tapes on the market today. And Thermoid Division engineers are available to work with you, as they worked with the Elliott Company, to develop Silicone tape with specific characteristics to meet your

For fresh stocks of "Porter" Silicone Tape or information on special design characteristics, write Thermoid Division, H. K. Porter Company, Inc., 200 Whitehead Road, Trenton 6, N. J.



Ask for this free brochure with ac-

THERMOID



DIVISION

## H.K.PORTER COMPANY, INC.

PORTER SERVES INDUSTRY with steel, rubber and friction products, asbestos textiles, high voltage electrical equipment, electrical wire and cable, wiring systems, motors, fans, blowers, specialty alloys, paints, refractories, tools, forgings and pipe fittings, roll formings and stampings, wire rope and strand.

For More Information Write No. 289 on Place Mark Card-Page 32

## Trade Secret

(Continued from page 96)

"It is unquestionably lawful for a person to gain possession through proper means of his competitor's product and through inspection and analysis create a duplicate unless, of course, the item is patented. But the mere fact that such lawful acquisition is available does not mean that he may through a breach of confidence gain the information in usable form and escape the efforts of inspection and analysis.

"The fact that a trade secret is of such a nature that it can be discovered by experimentation or other fair and lawful means does not deprive its owner of the right to protection from those who would secure possession of it by unfair means.

"The mere fact that the means by which the discovery is made are obvious cannot advantage the competitor who by unfair means or as the beneficiary of a broken faith, obtains the desired information without himself paying the price in labor, money or machines expended by the discoverer."

In New York State many years ago the owner of patterns for a rotary pump entrusted them to a pattern maker for repair. The pattern maker made a duplicate set and used them to manufacture pumps which he sold for his own benefit. While the pumps from these patterns had been marketed and were in public domain the patterns themselves, which greatly aided in the manufacture, had been kept by their owner as secrets.

In forbidding the pattern maker from using the copies he had made of the patterns entrusted to him, the court said:

"The fact that one secret can be more easily discovered than another does not affect the principle. Even if resort to the patterns of the pump manufacturer was more of a convenience than a necessity, still, if there was a secret it belonged to him and the pattern maker had no right to obtain it by unfair means or to use it after it was thus obtained.

"We think that the patterns were a secret device that was

(Please turn to page 224)

...GOOD REASONS FOR YOU TO USE

CUSHIONED-INSULATED SHIPPING BAG

Low Cost-

For about three and a half cents each for No. 3 size in 10,000 quantities, JET-PAK is not the cheapest material to buy – but is by far the most inex-pensive package to use. JET-PAK cuts packaging time per unit – ready for mailing – to 15 seconds or less. Com-pare that with your present method!

Security -

... Passed sternest drop tests demanded by U. S. Postal Authorities with flying colors. JET-PAK also considered pilferage-proof. Secret is JET-PAK. sidered pilterage-proof. Secret is JE 1-PAK's one continuous, tough, Kraft paper sheet construction—so folded and glue-locked that never less than two thicknesses guard contents at all times plus four thicknesses on end-folds. Compare that with your present method! method!

Breakage Proof -

. . Cushions contents with millions of tiny, resilient, paper particles. JET-PAK reduces breakage to an irreducible minimum. These same particles, combined with asphalt lamination, erect waterproof thermal barrier against both temperature and humidity. Compare that with your present method!

Simplicity-

. . Completeness as a package so speeds packaging process that even unskilled direct labor time is cut by more than one-half. JET-PAK eliminates waste motion — needs no supplementary materials — makes no mess on the receiving end. Easy to open, JET-PAK discloses all contents — ends losses of small parts due to careless shipping or receiving practices. Compare that to your present method!



Columbian Rope Company Auburn "The Cordage City" N. Y.

**Custom Plastics Extrusions** 

consult

YARDLEY



Special shapes or standard, rigid or flexible, in diameters from 1/2" to 16". Our engineers have developed advanced techniques that can save time and money on the right shape for your specific needs.



## SPECIAL SHAPES

We extrude any shape in a variety of formulations to meet a wide range of design and performance requirements. Our complete tool and die shop is staffed with skilled technicians. We maintain a library of more than 400 section dies, one of which may fit your product design.



## FABRICATED PARTS

We shape, flatten, curve, swedge, drill and perform other fabricating operations to make plastic parts ready for your production lines. Close tolerance, absolute uniformity, dimensional stability and high-gloss finish are standard production requirements at



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ARDLEY PLASTICS CO. 140-144 PARSONS AVE., COLUMBUS 15, OHIO

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223



# COMPUTER TAPE



# FOR PERMANENCE LIKE THE CENSUS RECORDS

Only metallic computer tape assures the resistance to stretching or distortion under heat and the complete non-absorption of water necessary to preserve important data like the U. S. census indefinitely under varying environmental conditions.

#### And Somers Thin Strip tape provides:

 optimum accuracy of recording and reproducing with controlled micro finish.

2) processing economy with coils of .001" metal up to 14,000 feet long without joining.

For computer tape and all Thin Strip requirements make Somers your permanent source of supply. Write for Confidential analysis of your application—no charge or obligation.

FOR EXACTING STANDARDS ONLY



Somers Brass Company, Inc. 128 BALDWIN AVE., WATERBURY, CONN. For More Information Write No. 307 on Place Mark Card—Page 32

### Trade Secret

(Continued from page 222)

not disclosed by the publication of the pump and that the pump manufacturer was entitled to the preventative remedies of the court. While the pattern maker could lawfully copy the pump because it had been published to the world, he could not lawfully copy the patterns because they had not been published but were still in every sense the property of the owner, who owned not only the material substance but also the discovery which they embodied."

## What's New in Packaging

(Continued from page 81)

addition to solid units such as tablets, improved machines were designed to form and fill singleuse packages of powders, creams, and liquids.

Since 1933, speeds of strippackaging machines have been increased ten-fold, some of them now capable of packaging 1,000 or more items in individual pockets per minute. In recent years, many variations of this idea have spread to other packagers and machine producers.

One important variant is the fold-over type of single portion polyethylene-coated paper packets for granulated sugar, now being produced by the billions. With today's improved materials and techniques for handling even liquids and paste, the list of unit package products now goes far beyond the original drug products. Some of the items are face powders, instant coffee, catsup, mustard, sundae toppings, softdrink powders, yeast, lotions, and laboratory chemicals.

#### **New Concepts and Materials**

1959 has given us a number of new packaging concepts and materials of construction. Among

Be sure to read
"PURCHASING PLANS
FOR PROFIT"
In the August 1st Issue

them are: Extrusion of Foamed Plastics—As foamed plastics become more competitive with paper, wood, and glass (because of the attractive weight to volume ratio), new uses are being developed for them in the packaging industry. The foamed plastics currently applicable include expandable polystyrene, polyurethane, and expanded polyethylene.

Generally, they provide excellent shock-absorbing qualities, very good insulation properties, and are excellent protectors against moisture. Foamed plastic compounds may be extruded into flexible sheeting and processed into packaging components by molding or fabricating. Polyethylene foamed film has made its appearance on a development scale, and its producers claim that it can be printed.

A possible future application: the lamination of a 15 to 20 mil foam core to surface film in order to provide a thermofoaming construction that will compete with the highest grades of folding carton stock. The foamed core stock for shipping containers, using expanded polystyrene, is finding certain applications where its insulation value and resistance to moisture is of advantage. However, its current high cost is a limiting factor to rapid growth. We will certainly hear more about foamed plastics for packing in the 1960's.

Polypropylene Film-The newest member of the polyolefin family, polypropylene, has just completed its first year on the market as an unsupported film. The combination of properties that this film displays surely indicates a rapid growth in the near future as a packaging material. Polypropylene film exhibits the highest tensile strength of any of the polyolefin film. The stiffness and abrasion-resistance are comparable only with the highest density polyethylenes. Because the melting point of polypropylene is about 50°F higher than high density polyethylene, it may be boiled or autoclaved. Heatsealing is reported to be straightforward, while shrinkage and puckering are not factors. WVTR,

(Please turn to page 226)



# TWO-BEARING DESIGN MAKES THESE EMERSON ELECTRIC MOTORS

Ideal for Refrigeration fan applications

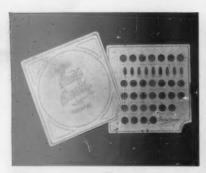
Here's a two-bearing motor uniquely suited for refrigeration fan applications. It operates in any position . . . with a minimum of bearing load, vibration and friction. It starts easily at low temperatures because of EMERSON ELECTRIC'S self-oiling, self-aligning bearings that act as soft metal sponges and remove oil from the shaft journal as the motor cools. It lubricates without felt wick or shaft groove and requires less than one-third the oil needed in solid sleeve designs; yet, its oil storage capacity is equivalent to 60% more than most other refrigerator fan motors. The self-aligning feature completely eliminates tight, shaft problems. EMERSON ELECTRIC will custom-erigineer motors to meet your specific needs. Call us today . . . you'll like our way of doing business!





EMERSON ELECTRIC of St. Louis . Since 1890

DEPT M-25, 8100 FLORISSANT . ST. LOUIS 36, MO. . CO 1-1800



# Purchase for Profit!

Campco Styrene

This effective make-up demonstrator is produced by Paper Package Co. of Indianapolis for Beauty Counselors, Inc. of Detroit. It is pressure-formed of Campco S-540 Styrene selected because of its sparkling, porcelain-like finish, excellent formability and resistance to cracking. The deeply embossed cover fits tightly over the container part on which names of the products are printed by silk-screen. This useful sales tool is just another example of purchasing for profit . . , which means to specify:

**CAMPCO** Sheet and Film

division: Chicago Molded Products Corp. 2717-F Normandy Ave., Chicago 36, III.

# What's New in Packaging

(Continued from page 224)

gas transmission, and oil resistance are all superior to polyethylenes, as are gloss and clarity.

Polypropylene has been converted on many of the bag forming and overwrapping machines which have been built especially for, or modified to handle, polyethylene and other soft films. It may be thermoformed for skin or blister packaging. Some authorities in this field are predicting that polypropylene will become the dominant film for over-wrapping in the next decade.

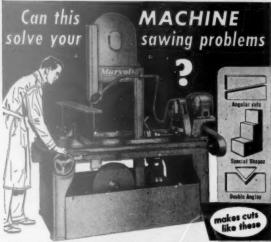
Metallized Paper—The vacuum metallizing process for applying extremely thin films of aluminum to papers and plastic films has been under study by several organizations. These materials are designed for use where the appearance of a foil lamination is desired, but where the protective characteristics of the foil are not necessary.

Metallized glassine has now been well accepted for ice cream bar wraps and is beginning to be used for can labels, candy bar wraps, bakery tray liners, and candy box mats. Other potential areas include overwraps for frozen food cartons and flexible laminations.

One of the severe technical problems has been the adapting of this process to a continuous roll to roll operation. With engineering advances, economics will improve and we will see more metallized stocks that will add glamour and distinction to our containers in the years ahead.

Stretchable Papers - Several major paper suppliers have announced the availability stretchable or extensible kraft paper designed primarily for paper bag and shipping sack constructions. These processes provide a machine direction stretch of 8% to 12% to be built into the sheet-resulting in a great increase in toughness and capacity to absorb work by the finished package. As a result, a reduction in the total basis of stock used can be made while still carrying out the packaging job required.

(Please turn to page 228)



If your metal sawing requirements are many and varied ... if you have to cut the smallest, most delicate work or heavy solids up to 18"x18" ... if you cut-off bar stock, pipe, tubing, moulding or structural shapes—then this MARVEL No. 8 Band Saw is the machine for you.

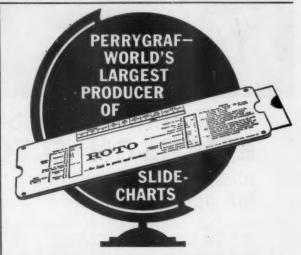
Not only is the MARVEL No. 8 Band Saw a truly

Not only is the MARVEL No. 8 Band Saw a truly universal machine capable of handling virtually any metal sawing job, but it does its work with unmatched efficiency, economy, and ease of operation. Many exclusive No. 8 Band Saw design and operating features such as vertical column design, control tower visibility, column and blade tilting to any angle up to 45° right or left of vertical for cutting at an angle or miter, are described in Bulletin 875. Write for it today. If you'd like a demonstration, mention the fact in your inquiry, and we'll arrange it at your convenience.



ARMSTRONG-BLUM MFG. CO. 8700 West Bloomingdale Avenue, Chicage, U.S.A.

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Two hundred million since 1932! More Slide-Charts for more people than any other company in the world.

Two Modern Plants, one geared to runs of millions, the other to hundreds. Finest facilities for accurate printing and assembly. Deliveries as high (in a pinch) as a million per week. Prices consistent with quality work and dependent on quantity and materials from pennies to dollars.

We invite your inquiry. Send for free full color booklet including 122 actual case histories.

## PERRYGRAF CORPORATION

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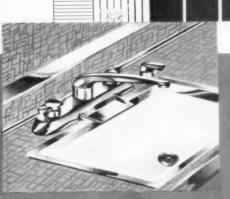
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Fine to have around the house

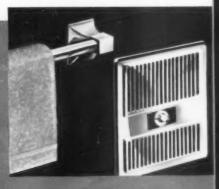
for every stainless reason!











Superior stanless strip ster

At every turn, stainless serves in the modern home ... brightens the decor, lightens every cleaning chore! From Superior Stainless Strip Steel, precise in specification for each specified need, are made scores of tarnish-proof, wear-resisting, care-banishing home products. • Let us discuss our steels and your fabrication possibilities, without obligation of any kind.

## **Superior Steel Division**

OF

COPPERWELD STEEL COMPANY CARNEGIE, PENNSYLVANIA

For Export: Copperweld Steel International Company, New York

# NOW-the first polished aluminum towel dispenser

"It'll look this good months from now"





The new look is polished aluminum — a brand new Turn-Towl cabinet that takes water and wear without showing it. Intensive two-year tests

- Anodized permanent aluminum finish can't rust. won't wear or chip
- Cabinet is easy to clean, leaves no fingermarks

Your nearest Mosinee Turn-Towl distributor has the new aluminum cabinet now. Write for his name.



Mosinee Turn-Towl cabinets are leased free for use with Mosinee towels

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## Instantly Bonds Anything...to Anything!

Wherever you use an adhesive - you can probably do the operation faster, better, more economically with new KLEEN-STIK 2-sided adhesives! Thin, tough film doublecoated with special moistureless adhesive, sticks tight to most surfaces. Replaces and outperforms glues, cements, gummed tapes, tacks, clips, nails, screws, staples, etc. - in hundreds of everyday applications!



in your own plant. Send \$1.00 for regular \$1.79 108 ft. Dispenser Pack.

Customized" to your needs !

Available in handy Dispenser Pack or large rolls, in standard 1/2", 3/4", or 1" width, with exclusive "Finger-Lift" edge. Also in bulk rolls up to 54" wide.

Neat ... Strong . . Invisible!

#### SAVE TIME AND MONEY IN ALL THESE OPERATIONS!

- Mounting Holding
- Attaching
  - Splicing
- Anchoring Joining
  - **Fastening**

Products, Inc. Industrial Division 7300 West Wilson Avenue & Chicago 31.

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## What's New in **Packaging**

(Continued from page 226)

Development work is underway on the use of such paper grades as components in laminants with stretchable plastic films for sturdily useful constructions. This development has been timely for the paper industry, because of the threat of plastic films in shipping sack construc-

Polyethylene Shipping Sacks— The potential invasion of markets -long held by the kraft multiwall bag industry-by all plastic shipping sacks is being carefully watched. Because of shifting economics and certain advances in polymer chemistry, the plastic film shipping sack appears to be much closer to widespread usage today than it was even six months

The multiwall kraft bags still appear to have the advantage from a strictly economical standpoint. But when you consider the protective qualities of the plastic films, such as chemical and moisture resistance, there will undoubtedly be many areas where the plastic film sack will find its market.

In addition to invading a paper market, plastic sacks seem likely to exert considerable influence in broadening the shipping sack market, such as those areas now served by various types of drums. Current development work is aimed at further reducing the price gap between all-kraft multiwall bags and free film shipping sacks designed to do the same

Pouch-In-Carton Pack - Carton-pouch combinations are rapidly coming to the fore. Packages in this group have been adapted to products which were previously packaged in steel cans, fiber cans, glass jars, or bottles.

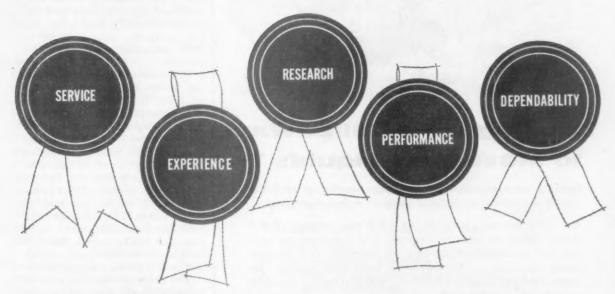
The development of the package type itself has been paced by the development of special materials and mechanical handling systems. A transparent polyethylene pouch-in-carton seems to be ideally adapted for packaging frozen fruits and berries in syrup. The fruit can be automatically

(Please turn to page 230)

More and more Purchasing Agents confirm the

# OK in OaKite

when they look for top quality in cleaning



Quality starts with materials designed for the job. It means concentrated cleaning efficiency so that a little goes a long way. And it means complete uniformity from barrel to barrel.

Which explains why working with Oakite offers important savings in time and work . . . costs less to do the job . . . and assures you an extra measure of service and dependability every time.

When the Oakite man tells you about

economizing with highest quality materials, more efficient methods, and the results of latest cleaning research ... remember that he and 250 other Oakite Technical Service Representatives have proved it to the satisfaction of many thousands of users. Ask the Oakite man nearest you to tell you more.

Oakite Products, Inc., 54 Rector Street, New York 6, N. Y.

#### IT'S GOOD PURCHASING POLICY TO ASK OAKITE ABOUT:

- Aluminum Cleaners, Etchants
- Cafeteria Sanitation
- Coach Washing Compounds
- · Descalants; Derustants
- · Hot Tank Cleaners
- · Paint Strippers
- · Prepaint Phosphate Treatment
- Steam-Detergent Cleaning Guns
- Barrel Finishing Compounds
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- · Electrocleaners
- In-Place Cleaning Heat Exchangers
- · Plant Maintenance Cleaning
- Spray Booth Maintenance
- other Mechanized Cleaning Methods





# Looking for a Better Way to Move Your Liquids?

Selecting the best method of getting your liquids from point A to point B requires consideration of a number of important factors.

Any pump will move a liquid. But will it move enough? Will it deliver against the pressures involved? Will it perform year after year with a minimum of servicing and downtime? Is it metallurgically correct for the chemistry of the liquid being pumped? Are replacement parts readily available, as well as complete, intelligent service by its manufacturer?

'Buffalo' makes an extremely wide line of centrifugal pumps, to provide a "best" pump for each specific job in today's immensely varied applications. Chemical Service Pumps. Double Suction Clear Water Pumps. Multi-stage Pumps. Single Suction Pumps. Fire Pumps. Sewage Pumps. Sump Pumps. Paper Stock Pumps, and others for every industry. Like 'Buffalo' Fans, they have proved themselves on the job for many, many years.

Your job of selecting a better way of moving liquids can be sure and easy. Just call your nearby 'Buffalo' Pumps Engineer. He'll be glad to give you all details and recommendations and to work with you and your Engineering staff.



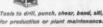


## **BUFFALO PUMPS**

Division Buffalo Forge Company Buffalo, New York Canadian Blower & Forge Co., Ltd., Kitchener, Ont.



Buffalo air handling equipment to move, heat cool, dehumidify and clean air and other gas





Buffale Centrifugal Pumps to handle most liquide and slurries under a variety of conditions.



Squier machinery to process sugar case, coffee and rice Special processing machinery for chemicals.

For More Information Write No. 315 on Place Mark Card-Page 32

## What's New in Purchasing

(Continued from page 228)

packed in pouches of clear polyethylene film (with or without a tear string opening device) and the sealed pouches placed in cartons, overrapped and frozen by conventional methods.

One important advantage of this packaging concept is that it permits much faster thawing of the fruit, compared to the conventional cannister-type package. Pouch-in-carton packaging can cut packaging costs as much as 30%, compared to metal-end cannisters.

**Transparent Cartons from Plas**tic Sheet-An example of new thinking in the application of plastic materials is the method for cold forming by oriented polystyrene sheet, bent to shape like metal without either pre-scoring or heat. First result of this technique will be a tray with locking tabs at only slightly higher prices than fancy folding, window, or setup boxes. This ultimate aim, still some distance away, is a complete folding carton that will be formed from a variety of plastics to suit product requirements.

The more conventional way of forming plastic sheet into carton constructions — thermoforming — is being actively exploited by a number of companies. The emphasis now is on higher speed continuous operations. Potentially, this development poses a severe threat to the established folding carton industry.

Boilable Pouches—There is no doubt that the development of the boilable pouch or cook-in package has caught the fancy of both the food processor and the consumer. This type of package offers a number of advantages to the user—such as improved taste, appearance, and nutritional value. It offers reduced clean up time, several different foods may be prepared in the same container, and cooking odors do not escape.

Currently, the most widely used materials for forming the boilable pouches are Minnesota-Mining's Scotchpak, polyethylene-coated Mylar, and polyethylene-coated paper and foil combinations. It is now possible for

the housewife to prepare a meal for one person or a dozen in almost the same amount of time.

#### Materials of the Future

Next we should consider several new materials which have yet to feel the real push of applied research in the packaging field. These materials have a fascinating technology and are examples of the highest art of the organic chemist. They are "Delrin" and "Teflon FEP"—both developments and products of Du-Pont—and the "Penton" polymer of Hercules.

Delrin - This new DuPont acetal resin is now in volume production, climaxing five years of process development and end use testing. From a chemical standpoint, Delrin is a relatively simple polymer of formaldehyde. It has been common knowledge for many years that formaldehyde tended to polymerize, but it was only after a very intensive study of this reaction that the process of making a useful resin could be controlled and directed toward a material with useful properties.

About \$40 million have been invested in this research, development, and engineering program. Now, however, projected uses for Delrin are coming to light as makers of automobiles, appliances, packages and machinery put the plastic through its paces in their plants and laboratories.

Delrin exhibits an unusual combination of properties unmatched by any other plastic. It is tough and strong, dimensionally stable at temperature extremes and under load, easily fabricated, pleasant to the touch, and resistant to staining and hard wear. It is destined for many uses replacing metals because of its dimensional stability and corrosion-resistance.

As a packaging material, the resin has been molded successfully into bottles, caps, closures, and aerosol containers. Resistance and low permeability to almost all solvents and many other chemicals make it an excellent prospect for special liquid packaging as well. Recent price reduc-

(Please turn to page 232)



# Looking for a Better Way to Handle AIR?

First step in selecting the best air handling equipment for the job is to pick the right manufacturer.

- 1. Does he have a complete enough line?
- 2. Does he make a quality line?
- 3. Does he maintain nationwide service?
- 4. Facilities for engineering and manufacturing for special applications?
- 5. Reputation years in business satisfied customers?

On all five counts, 'Buffalo' offers you a better way to handle air. Quality fans of every type and size, from propeller fans to giant

centrifugal fans. A large factory and field Engineering Organization to help you at any time — competently. Facilities to design and manufacture any special-purpose equipment you may require. Finally, an 83-year reputation for excellence of product performance in the field.



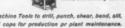
Call your nearby 'Buffalo' Engineering Representative about your air handling problem. See what we mean by a "better" way.



## **BUFFALO FORGE COMPANY**

Buffalo, New York Canadian Blower & Ferge Co., Ltd., Kitchener, Ont.

handling equipment to move, heat,





Buffaio Centrifugal Pumps to handle most liquids and slurries under a variety of conditions.



quier machinery to process sugar cane, coffee and rice, pecial processing machinery for chemicals.

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# PERMANENT Flameproof Work Clothes



## For Men On Hazardous, Jobs

Protect your employees from the danger of flame and flash point. SETLOW Flameproof Work Clothes reduce accidental burns: resist mildew, fungi, and bacteria. Non-toxic, harmless to the skin, no odor.

## Flameproofing Will Not Wash Out After Multiple Laundering and Dry Cleaning

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## What's New in Packaging

(Continued from page 231)

tions for Delrin are helping to gird it for the competitive battle with metals and other plastics. In the packaging field, it will undoubtedly be most widely adopted for the rapidly growing family of aerosol cans.

Teflon FEP-Another recent development is Teflon fluorinated ethylene propylene. This is not the Teflon resin which some of you may be familiar with, but a new polymer with much more diversified properties.

Commercial production has just started on two new forms of this resin, a bulk solid and a film. Film can be produced from the resin, in gauges from 1/2 mil to 40 and over, which is uniform and pin-hole free. It can be fabricated by conventional extrusion and molding techniques, as it is heat-sealable, heat-formable, and vacuum-formable.

In many instances, it can be bonded to other materials without adhesives. In thin gauges, it is transparent. The film is inert to virtually all known solvents and chemicals up to 400°F. This certainly portends uses in specialized packaging applications where these outstanding barrier properties are worth the relatively high price of the material. Other useful properties include toughness and strength retained over a wide temperature range and low permeability to liquids, gases, and organic vapors.

Penton-Several years ago, a senior research chemist of the Hercules Powder Company conceived an idea for making a new type of polymeric plastic. Chemically speaking, this material was a poly ether. It differs from other plastics because it hardens, or sets, in a completely strain-free form by crystallizing, rather than by heat removal or freezing.

This material also exhibits outstanding dimensional stability. It has a high degree of insolubility and chemical inertness to both inorganic and organic chemicals, including acids, alkalies, oxidizing agents, and strong solvents. Just what applications this prod-

uct will find in the packaging field is too early to say, but its properties would certainly indicate that it may be the answer to at least some highly specialized packaging problems in the future.

### What Does the Future Hold?

Let's take a look into the new decade to see what some of the important trends in packaging are going to be.

First of all, a titanic battle is about to be joined between high density polyethylene bottles and metal cans for a large share of the liquid detergent market. The high density polyethylene bottle will certainly set off a chain reaction that will affect products other than detergents and containers other than bottles. Dry detergents and folding cartons are more than innocent bystanders in what lies ahead.

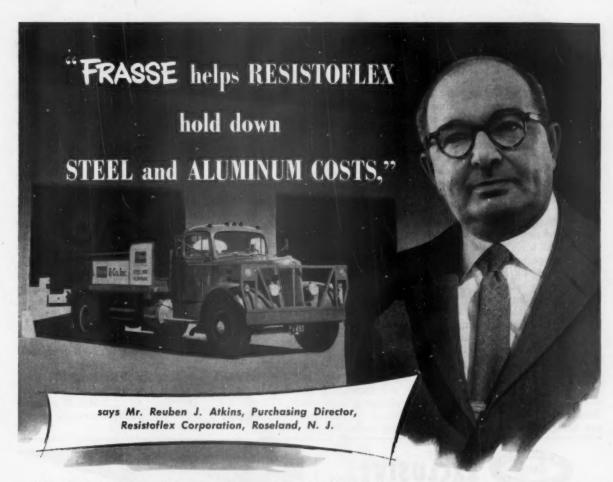
Aluminum will challenge tinplate on an increasing scale. Plastics will challenge established materials right across the board, from paper-board on up. And where they are threatened by new materials, many of the older ones will be combined with them to advance together in the form of laminations and augmentative duplex constructions.

## **Carton Revolution Predicted**

The design and construction of folding cartons will undergo a revolution, particularly for packaging frozen foods, baby foods, and any number of semi-liquid and liquid products. These changes will be eased by developments in high frequency sealing, improved high barrier carton constructions, and the carton-pouch systems. The carton field appears to be headed in the direction of a single-wall barrier structure, which will eliminate overwraps and inner liners and permit packaging speeds of from 300 to 400 units per minute at least. Pouches permitting heat and serve convenience are sure to be increasingly important.

Flexible packages will continue to have the greatest potential of all and should bid for larger segments of many product fieldsincluding prepared foods, soluble

(Please turn to page 234)



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## What's New in Packaging

(Continued from page 232)

coffee, liquid preparations for the laundry, motor oil, condiments, and dehydrated foods. There will continue to be an almost irresistible demand for packages which reduce the work of menu planning, food preparation, and cleanup-in other words, "instant maid service." With the number of working wives estimated to increase from 18 million to 24 million in the next decade, the builtin demand for such packaging is readily apparent.

Advances in laminations and coatings, as well as in base materials, will offer more diversified opportunities for using and developing flexible packaging. Polypropylene film stands in much the same position for the '60's that polyethylene occupied ten years ago. The resin and film are already close in cost to other volume materials and new producing units for polypropylene are being announced periodically.

At the start of the new decade, there are at least four promising developments in thermoformed packages that appear to offer even greater opportunities. The first is the availability of high density polyethylene and polypropylene to enlarge the world of thermoforming. Secondly, high speed automatic filling, and sealing machines are proving practical. A new stretched vinyl film card package has been introduced. And finally thermoforms lend themselves to easy loading and closing, which seems to be particularly adaptable for small runs.

#### Increase Usefulness

Because shipping containers are so universally used, this area of packaging is certain to be filled with significant and far reaching advances. Currently, improved moistureproof board, polyester coated board, foam core stock, and improved printing surfaces are expanding the usefulness of shipping containers. These are bound to continue on an expanding scale.

The shipping sack can be expected to show significant gains in performance and economy on the basis of greater functionality provided by the two newest components-extensible kraft and polyethylene. Their performance will be further augmented by heat-seal closures, special laminated structures, tear strip openings, anti-skid coatings for stacking, and better printing surfaces. A development certain to have an impact in the 1960's is the use of higher density polyethylene and co-polymer blends for shipping bags. The already established 10 mil film may thus be reduced to seven or even five miles. If this happens, and all-plastic polyethylene bag will be competitive in cost with regular multi-walls.

#### Be Bold

There is a great feeling of challenge and excitement facing the field of packaging in the next decade. For packaging, it will be the "Bold 60's," if it is to succeed in the competitive struggle ahead.

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## **Purchasing People In The News**

(Continued from page 59)

Cameron F. Jones has been appointed division purchasing agent of Hercules Powder Company, Wilmington, Dela. Mr. Jones' new responsibilities include the purchasing of construction and maintenance materials and equipment. He joined Hercules in 1938 as an expeditor in the purchasing department. During the next twenty-two years he held various positions in the company, including that of buyer and assistant purchasing agent at the Louisiana, Mo. plant: purchasing superintendent at Radford Arsenal, Radford, Va. (a Government-owned, Hercules-operated facility); and in 1946 he returned to the Wilmington office as a buyer. He is a member of the Purchasing Agents Association of Wilmington.

Leo Friedman has been made assistant to the director of manufacturing, Technical Products Division, Packard Bell Electronics, Los Angeles, Calif. Mr. Friedman has been associated for the past



Leo Friedman

seventeen years with the Radio Receptor Company, Brooklyn, N. Y. He has served successively as assistant production manager and director of procurement, for their Defense Products Division. He attended New York University and the Radio Television Institute in New York City.

Appointment of David H. Shearer as manager of purchases for the Premier Industrial Corporation, Cleveland, Ohio, has been announced. Mr. Shearer, whose



David H. Shearer

position is newly created, will coordinate an expanded purchasing program for the company's plants in Cleveland, Atlanta and Los Angeles. Formerly associated with the Chrysler Corporation and Ford Motor, Mr. Shearer is an industrial management graduate of Ohio State University.

John B. Nimons has been named assistant purchasing manager of the Borden Company, New York, N. Y. Mr. Nimons joined the company in 1933 as an accountant with the company's North East fluid milk and ice cream district in Troy, N. Y. He served in the district 21 years as a purchasing agent. He was transferred to the general purchasing department at the company's New York City headquarters in 1957 as an assistant purchasing agent. He is a member of the National Association of Purchasing Agents, and has been chairman of membership and program committees.

Dole Hawaiian Pineapple Company, Ltd., San Jose, Calif., has made a number of purchasing appointments. A. K. Tobin has been

named manager of the company's purchasing division. He will assume the responsibilities of R. R. Rohlfing who is retiring after more than 30 years of service. A Gordon Hodgins, Jr. will become assistant purchasing manager, H. White Sutton, Honolulu purchasing agent and A. C. Hagen, Jr., administrative assistant to Mr. Tobin.

Mr. Tobin joined Dole in 1936. He has been general purchasing agent since 1954. Mr. Rohlfing, who came to the company in 1927, was elected a vice president in 1954. He was also a member of the team which developed the first successful process for producing pineapple juice and played a big part in Dole's decision to build its own corrugated box plant in Honolulu in 1941 and its own canmanufacturing plant there in 1955.

Harley W. Fulmer has been appointed purchasing agent of the Koh-I-Noor Pencil Co., Inc., and L. & C. Hardtmuth, Inc. Blooms-



Harley W. Fulmer

burg, N. J. Mr. Fulmer was associated with Chipman Knitting Mills and Chipman Spinning Mills, Inc., Easton, Pa., for 24 years. He was purchasing agent for these companies for 20 years. For the past 6 years he has been with the Easton National Bank and Trust Company.

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Education: 4 years college with BS in EE; varied military and civilian training to include study of Spanish. Will relocate. In U. S. or overseas.

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Experience: Over nine years purchasing agent for medium-sized precision sheet metal fabricating plant. Purchase all raw materials, machinery and MRO supplies. Supervise the sub-contract buying of machined parts and finishing. Have an excellent knowledge of metals, processes and finishes. Keen memory, especially details.

Education: Bachelor's degree in science education, major in chemistry, Syracuse University.

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Experience: Ten years experience with industrial tool distributors. 2 years as outside salesman calling on purchasing agents, buyers, engineers and tool and die shops. 8 years as office manager responsible for purchasing industrial tools, tool steel and allied items together with various other supplies and sundries. Also expediting, inside telephone sales, inventory control, correspondence, etc.

Education: B.S. in bus. adm. Also 2 years night school: machine shop, eng. dwg., blue print reading, shop math. Also 10 months watch making school. Will relocate: But prefer Calif., Florida,

Write: Box 205

Experience: Purchasing agent: proven administrator, multi-plant operation. 14 years diversified purchasing experience, including capital equipment, building construction, maintenance supplies, scheduling of materials, inventory control, legal contracts, value

Education: University of Rochester degree: specialist's certificates in marketing and production management.

Will relocate. Write: Box 212

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Education: High school graduate with 8 years practical job experience.
Will relocate: Florida.

Write: Box 214

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Education: B.A. degree-major math. post graduate courses: mechanical engineering, bus. adm. acct'g., foreign finance. Physics & chemistry.

Will relocate. Write: Box 206

Experience: Qualified for purchasing, public relations, accounting or managerial capacity. Able negotiator, wide knowledge of markets, inventory control, value analysis. Assistant p.a. small size company 1941-1947 P. A. medium size company 1947 thru 1960. Full responsibility for purchasing raw materials, finished goods, office & warehouse

supplies and capital equipment.

Education: 1933-37 Drexel Institute. Accounting, commercial law, business English and business math., 1956 evening school courses in speed reading, public speaking & gen. adm. Course sponsored by P.P.A.

Will relocate. Write: Box 207

Experience: 4 years technical sales-2 years vendor expediting-3 years negotiation, administration government subcontracts. Multimillion cost plus and fixed-fee. 2 years purchased capital equipment and raw material, large petrochemical company. Strong subcontract background in equipment and raw material.

Education: B.S. in chemistry supplemented by night coures in business law, accounting, Dale Carnegie course. Aviation electronics school, U.S. Navy

World War II.

Will relocate, but prefer Middle Atlantic States.

Write: Box 208

Experience: Twenty years in research and development and purchasing. Willing to stay in above fields or diversify further. Salary requirements \$15,000. Education: Chem. Eng. degree.

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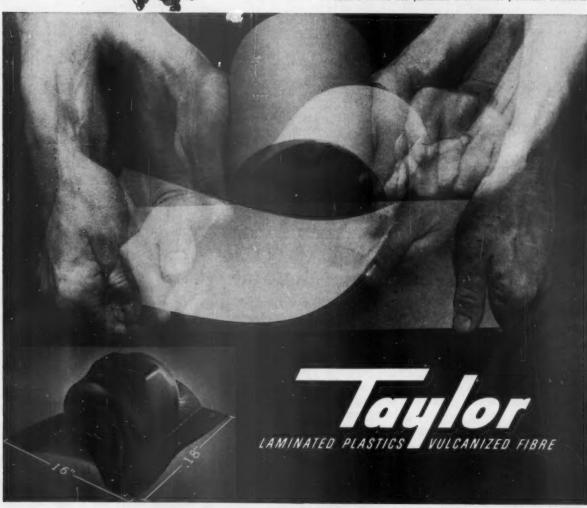
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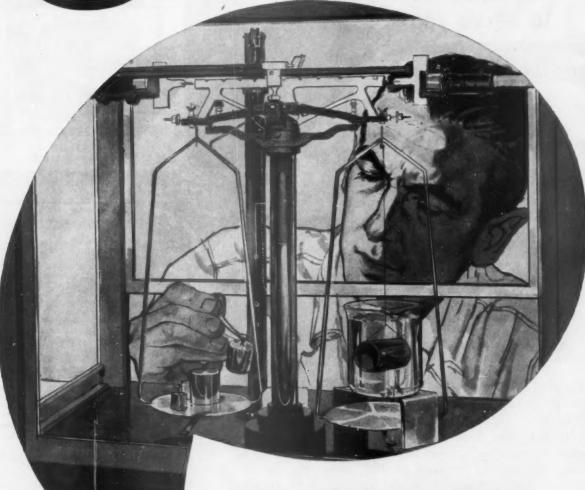


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Neoprene remains flexible even at -65° F.



RESISTANCE TO OIL

Neoprene retains its properties in contact with oil and grease.

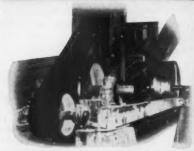


RESISTANCE TO SUN AND WEATHER

After 25 years' exposure, neoprene cable (bottom) shows no surface cracking.



Neoprene tire sidewalls resist ozone cracking.



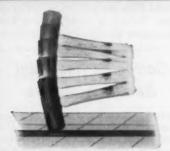
RESISTANCE TO ABRASION

Tough neoprene gives dependable service in severe applications.



RESISTANCE TO CHEMICALS

Neoprene assures protection against most acids and chemicals.



RESISTANCE TO IMPACT

Neoprene has outstanding resilience, resists permanent distortion.

# SPECIFY VERSATILE DU PONT NEOPRENE

synthetic rubber

A quarter century of industrial service has proven that versatile Du Pont neoprene, with this balanced combination of properties, can meet a range of severe service requirements. Neoprene products are available from rubber goods manufacturers and distributors. For additional information, write E. I. du Pont de Nemours & Co. (Inc.), Elastomer Chemicals Department P-7, Wilmington 98, Delaware.



BETTER THINGS FOR BETTER LIVING ... THROUGH CHEMISTRY

NEOPRENE MAKES TODAY'S PRODUCTS BETTER . . . TOMORROW'S PRODUCTS POSSIBLE

For More Information Write No. 326 on Place Mark Card—Page 32

# MATERIALS-HANDLING NEWS

NEW AND UNUSUAL APPLICATIONS OF BASSICK CASTERS THAT MIGHT BE ADAPTED TO YOUR HANDLING PROBLEMS



## **Kodak moves liquid chemicals** on Bassick Casters

At the Kodak Park Works plant of Eastman Kodak Company, small quantities of chemicals must be gently and safely moved from one production area to another. Bassick is proud to have been selected as the supplier of the casters

used in this operation. The operator above is adjusting the flow of chemicals that will be used in the manufacture of photographic paper-just one of the many high-quality Kodak products that use chemicals.

## Locks and levelizing jacks make casters more useful!



Bassick truck locks and swivel locks hold castered equipment like scaffolds or machine tools in any desired position.

A Bassick levelizing jack offers an easy way to stabilize or level heavy portable equipment. Through the development of such "accessory" equipment, Bassick helps make materials handling easier, safer and more efficient.

Your local industrial distributor who handles Bassick casters will be glad to show you how casters will help you solve your materials handling problems. He has a convenient stock of Bassick Casters as near as your telephone.

Cross Brothers have the

right steer on casters

The meat's tender, but the movement prob-

lem is tough. Slippery sawdust floors make

movement tricky. Heavy loads make "load

guidance" difficult. Temperature changes

between cold storage and work areas make

materials handling problems. Series "BA"

and "BB" casters, for instance, are made of

corrosion resistant, easy-to-clean alumi-

num. Notice the smooth exterior? No places for dirt, dust or food particles to lodge or

cause trouble. And heat treated aluminum won't rust even when caster is steam cleaned. Design like this enables Bassick Casters to meet the most unusual floor conditions, load requirements and working environment

But, Bassick designs casters to overcome

maintenance a problem.

## Corrosion Resistant Sanitary Casters

Modern materials and advanced design ideas have enabled Bassick to help solve many difficult materials handling problems. Corrosion resistant casters, for example, were developed specially for use in corrosive conditions-and where maximum sanitation is imperative. You'll see them in chemical plants, food plants, packing houses and many similar locations. They also feature a smooth exterior which won't pick up dirt, dust or food particles. Easy to keep clean, too, because there's plenty of room around wheel, plate, horn and other parts. Write for Bulletin AJI-60.





At Cross Brothers Plant, Philadelphia, Pennsylvania.

BASSICK COMPANY BRIDGEPORT 5, CONN. IN CANADA: BELLEVILLE, ONT.





with economy and efficiency.



For More Information Write No. 327 on Place Mark Card-Page 32

# FOR SAFETY YOU CAN SEE REMEMBER THE "V" FOR VISIBLE BLADES!



• The men who pull the switches will tell you what can happen when a switch, believed to be open — isn't. A lot of things can happen—and every one of them is bad. Personnel safety is in jeopardy. Motors can single-phase. Machinery and work can be damaged. Down-time can skyrocket.

Doesn't it make sense to insist on Visible Blade construction which gives you a road block against any of those possibilities? Doesn't it make equally good sense to insist on the safety switch which gives you that construction—plus a lot of other performance advantages? Evidently it does, because Square D switches have never been out of first place in more than 50 years!

They cost no more...why settle for less?

MAIL the coupon for latest Safety Switch Bulletin

Square D Company, Dept. SA-119			
1601 Mercer Road, Lexington, Kentucky			
DI			

Please send me your latest SAFETY SWITCH BULLETIN

NAME.....

ADDRESS

CITY ZONE STATE



# SQUARE D COMPANY

COMPANY

wherever electricity is distributed and controlled

For More Information Write No. 152 on Place Mark Card-Page 32

## A Reliable Way to Judge

# a COPPER TUBE **Piping System**

(DIGDID)



## Jenkins Bros

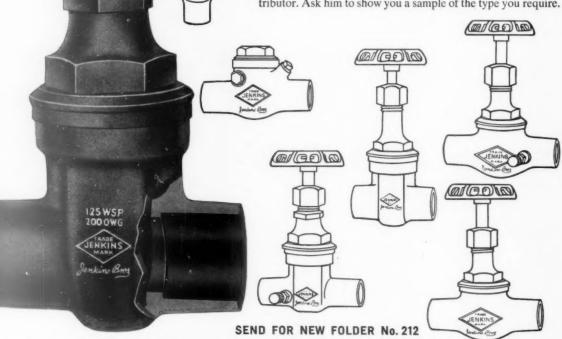
Surest kind of assurance that it is a QUALITY installation is given by the famous Jenkins "Diamond" on valves controlling the lines.

Where "anything will do", you're not likely to see Jenkins Solder (or Socket) End Valves. But you can expect to find them on jobs handled by engineers and contractors who know an economy installation is one you can forget.

Compare Jenkins Solder End Valves with any others. You'll see why they are trusted to give a lifetime of reliable service with a minimum of attention.

Note the thick, smooth bore solder-joint ends that withstand heating and contribute to a quick, leak-proof connection. Look inside at the many Jenkins superiorities in design and construction.

A complete line of top-quality Jenkins Solder End (and Socket End) Valves is available from your local Jenkins Distributor. Ask him to show you a sample of the type you require.



**JENKINS** VALVES SINCE THE GONDAINS BOOK

Jenkins Bros., 100	Park Ave	nue, New	York 17	
Send folder No. 2	12 describ	ing all So	der End and	1
Socket End Valves	s.			
Name & Title		,		************
Company				



